









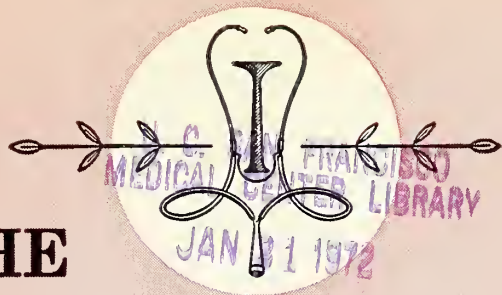




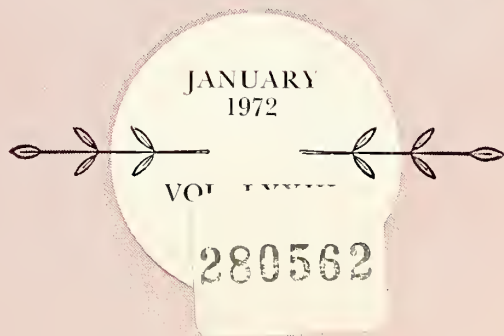
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THE  
Journal  
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# IF MORE MEN CRIED

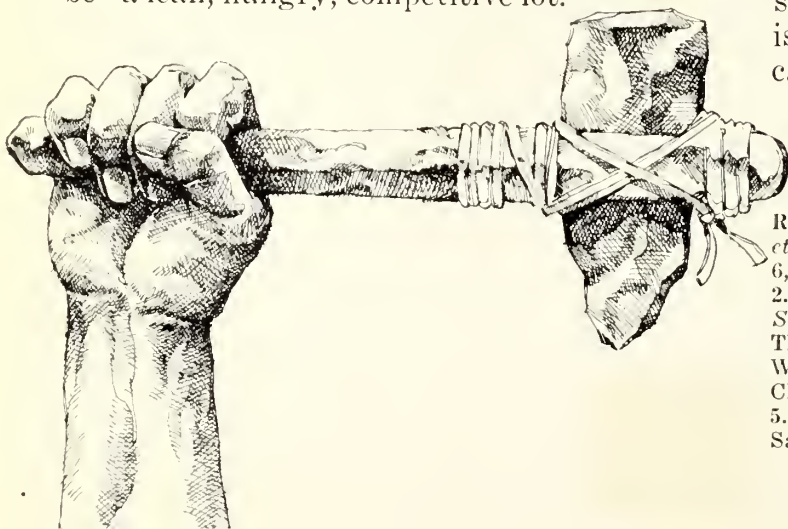


At least seventy-five out of one hundred adults with duodenal ulcers are men.<sup>1</sup>

Why? It may be significant that duodenal ulcer patients tend to crave recognition and are "especially vulnerable to threats to their manly assertive independence."<sup>2</sup>

**Hypersecretion—an atavistic response.** Stewart Wolf, who, with Harold G. Wolff, studied the personalities of duodenal ulcer patients, wonders if masculine competitiveness is related to "an atavistic urge to devour an adversary." It is striking, he reports, that an accentuation of gastric acid secretion and motility can be "induced in ulcer patients by discussions that arouse feelings of inadequacy, frustration and resentment."<sup>2</sup>

**By chance? A lean, hungry lot.** Was the link between emotions and gastric hyperacidity acquired through mutation to serve a purpose? During man's jungle period of evolution, the investigator points out, a male dealt with a foe by killing and devouring it. "It may be more than coincidence," he concludes, that peptic ulcer patients appear to be "a lean, hungry, competitive lot."<sup>3</sup>



**Big boys don't cry.** If more men or maybe fewer would wind up with duodenal ulcers. But men will be men—the sum total of their genes and what they are taught. Schottstaedt observes that when a mother admonishes a son who has hurt him, she is teaching him that big boys don't cry, is teaching him stoicism.<sup>4</sup> Crying is a negation of everything society thinks of as manly. A boy starts defending his manhood at an early age.



**Take away stress, you can take away symptoms.**

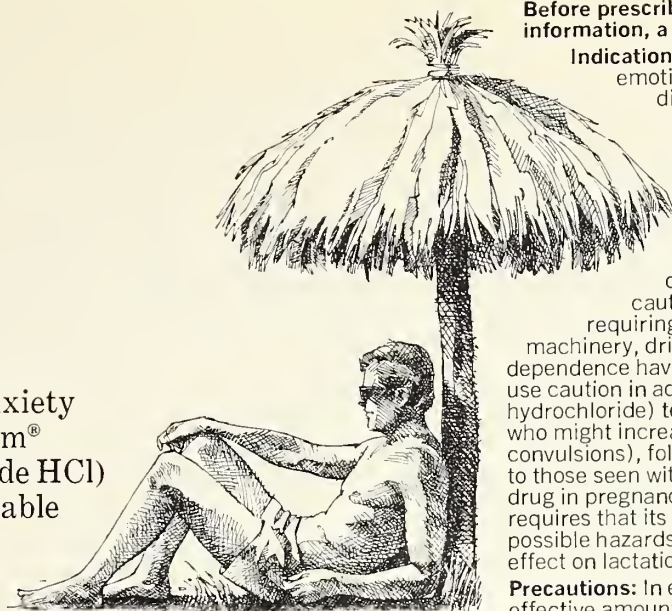
There is no question that stress plays a major role in the etiology of duodenal ulcers. Alvarez<sup>5</sup> observes that many a man with a duodenal ulcer loses his symptoms the day he shuts the office and starts out on a vacation. The problem is, the type of man likely to have a duodenal ulcer is the type least likely to take vacations or take it easy at work.

**The rest cure vs. the two-way action of Librax.<sup>®</sup>** For most patients, the rest cure is as unrealistic as it is desirable. Still, the stress factor must be dealt with. And here is where the dual action of adjunctive Librax can help. Librax is the only drug that can

References: 1. Silen, W.: "Peptic Ulcer," in Wintrobe, M. et al. (eds.): *Harrison's Principles of Internal Medicine*, 6, New York, McGraw-Hill Book Company, 1970, p. 68. 2. Wolf, S., and Goodell, H. (eds.): *Harold G. Wolff: Stress and Disease*, ed. 2, Springfield, Ill., Charles C. Thomas, 1968, pp. 68-69. 3. *Ibid.*, p. 257. 4. Schottstaedt, W. W.: *Psychophysiologic Approach in Medical Practice*, Chicago, Ill., The Year Book Publishers, Inc., 1960, p. 15. 5. Alvarez, W. C.: *The Neuroses*, Philadelphia, Pa., W. B. Saunders Company, 1951, p. 384.



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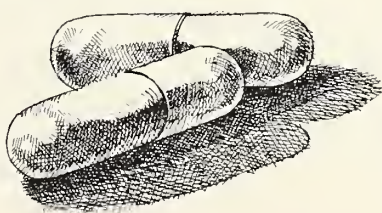


**Protects man from his own hungry per-  
sensitivity.** The action of Librium reduces  
anxiety—helps protect the vulnerable patient  
from the psychological overreaction to stress  
which clutches his stomach. At the same time,  
the action of Quarzan helps quiet the hyper-  
active gut, decreasing hypermotility and  
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**An inner healing environment with 1  
capsule, 3 or 4 times daily.** Of course,  
there's more to the treatment of duodenal  
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just to a different pattern of living if treat-  
ment is to succeed. During this adjustment  
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daily can help establish a desirable environ-  
ment for healing.

**Librax:** It can't change man's nature.  
But it can usually make it easier for men to  
live with the discomfort of stress—both  
psychic and gastric—that can precipitate  
or exacerbate duodenal ulcer.

**Librax:** Rx #60 1 cap. *a.c.* and 2 *h.s.*



**Before prescribing, please consult complete product  
information, a summary of which follows:**

**Indications:** Indicated as adjunctive therapy to control  
emotional and somatic factors in gastrointestinal  
disorders.

**Contraindications:** Patients with glaucoma;  
prostatic hypertrophy and benign bladder  
neck obstruction; known hypersensitivity to  
chlordiazepoxide hydrochloride and/or  
clidinium bromide.

**Warnings:** Caution patients about possible  
combined effects with alcohol and other CNS  
depressants. As with all CNS-acting drugs,  
caution patients against hazardous occupations  
requiring complete mental alertness (e.g., operating  
machinery, driving). Though physical and psychological  
dependence have rarely been reported on recommended doses,  
use caution in administering Librium (chlordiazepoxide  
hydrochloride) to known addiction-prone individuals or those  
who might increase dosage; withdrawal symptoms (including  
convulsions), following discontinuation of the drug and similar  
to those seen with barbiturates, have been reported. Use of any  
drug in pregnancy, lactation, or in women of childbearing age  
requires that its potential benefits be weighed against its  
possible hazards. As with all anticholinergic drugs, an inhibiting  
effect on lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest  
effective amount to preclude development of ataxia, over-  
sedation or confusion (not more than two capsules per day  
initially; increase gradually as needed and tolerated). Though  
generally not recommended, if combination therapy with other  
psychotropics seems indicated, carefully consider individual  
pharmacologic effects, particularly in use of potentiating drugs  
such as MAO inhibitors and phenothiazines. Observe usual  
precautions in presence of impaired renal or hepatic function.  
Paradoxical reactions (e.g., excitement, stimulation and acute  
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protective measures necessary. Variable effects on blood  
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the drug and oral anticoagulants; causal relationship has not  
been established clinically.

**Adverse Reactions:** No side effects or manifestations not seen  
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When chlordiazepoxide hydrochloride is used alone, drowsi-  
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and debilitated. These are reversible in most instances by  
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at the lower dosage ranges. In a few instances syncope has  
been reported. Also encountered are isolated instances of skin  
eruptions, edema, minor menstrual irregularities, nausea and  
constipation, extrapyramidal symptoms, increased and  
decreased libido—all infrequent and generally controlled with  
dosage reduction; changes in EEG patterns (low-voltage fast  
activity) may appear during and after treatment; blood dyscras-  
ias (including agranulocytosis), jaundice and hepatic dys-  
function have been reported occasionally with chlordiazepoxide  
hydrochloride, making periodic blood counts and liver function  
tests advisable during protracted therapy. Adverse effects  
reported with Librax are typical of anticholinergic agents, *i.e.*,  
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constipation. Constipation has occurred most often when  
Librax therapy is combined with other spasmolytics and/or low  
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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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# The Advantages and Need for Peer Surveillance of Health Care

*Whither Now?*

**H. PHILLIP HAMPTON, M.D.,\*** *Tampa, Florida*

## Health Care Expenditure Trends

THE ADEQUACY OF DELIVERY and economy of expenditures for health care are the current national health issues demanding action by this session of Congress.

Total 1970 health care expenditures of \$70 billion, or 7 per cent of the Gross National Product, when compared to the 1950 expenditures of \$12 billion, or 4 per cent of the Gross National Product, indicate the rapidly increasing demand and expenditures for modern health services.

In the past 20 years, as indicated in *Chart 1*, the three major methods of financing personal health care have demonstrated distinct trends: 1) a steady decline in private post-payment (out-of-pocket), 2) an appreciable gain in private pre-payment (health insurance) to 1965 and since then a relative decrease, and 3) since 1965, a very rapid increase in public expenditures (tax funds). In 1970, the sources of payment for personal health care were approximately 40 per cent tax funds, 20 per cent private insurance, and 40 per cent out-of-pocket.

## Proposed Health Care Plans

Proposals for financing future health care systems emphasize either private health insurance or tax

funding and range from: 1) achieving almost universal voluntary comprehensive health insurance through tax incentives for private funding of health insurance by business and individuals, and using tax payment of premiums only for the poor, to: 2) a to-

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**Those physicians who favor the public tax method of financing all future health care, need do nothing but await congressional action and government direction of the health care delivery system. But those physicians who are convinced that substantial private funding of comprehensive voluntary health insurance will provide the best national method for future support of health care delivery, are logically obligated to cooperate in the development of alternative systems of health care delivery appropriate to community needs, and to participate in achieving truly effective peer surveillance; for a health delivery system which leaves large segments of the population without adequate care will not be long endured and an uncontrolled financing method will not long survive.**

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\* Presented at the 112th annual meeting of the Kansas Medical Society, May 11, 1971, Topeka.



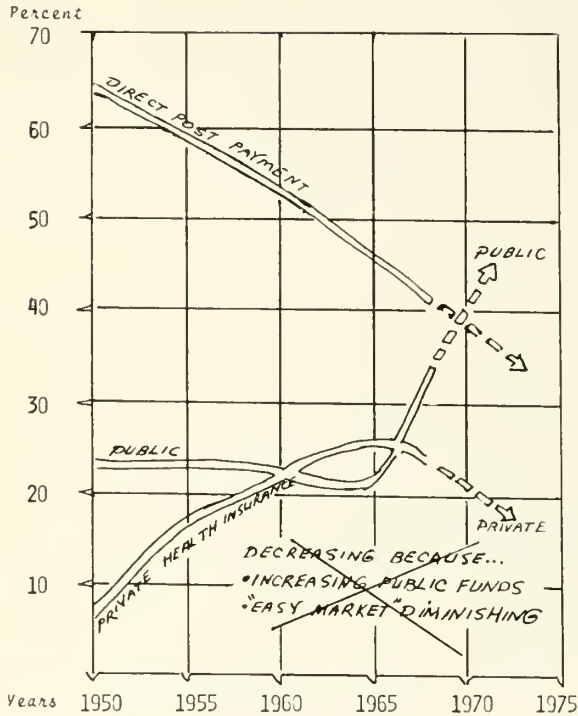


Chart 1. Trends in financing health care.

tally tax supported and government supervised health care system for all.

The first proposal envisions building on and improving the present system of payments by private health insurance coverage for health care needs, and an evolutionary adaptation of present health care delivery methods appropriate to community needs. The second proposal mandates a revolutionary change to total tax support for health care financing and government direction and supervision of delivery.

### Increasing Demand for Health Care

Recent scientific advances which dramatically improved the effectiveness of modern medical care, and the use of third parties to finance health care, have contributed in large measure to the rapidly increasing demand and expenditures for health care.

In 1970, there were one and one-half billion individual physician-patient encounters in the United States—40 million in Florida and 14 million in Kansas, and nationally over 30 million people were admitted to hospitals. In the same year, over three-fifths of the cost of health care was paid by third parties and not directly by the patient. Over 95 per cent of institutional admissions required submission of a detailed report to a third party for payment, and almost 50 per cent of physician-patient encounters required a detailed statement for payment.

Any future national system for the management of health care expenditures or surveillance of medical care delivery will require the recording and analysis of about 2 billion individual physician-patient encounters a year. A task of this magnitude can be accomplished only with systematic use of modern communication and electronic data processing methods.

Management of health care expenditures is a responsibility of the patient's financing or insuring agent. Surveillance of quality and appropriateness of health care delivery is an obligation of physicians. Efficient management of financing and effective surveillance of delivery are essential requirements for success of a health care system financed through insurance and delivered by a variety of methods which will provide maximum opportunity for freedom of choice for both the patient and physician.

To accomplish this monumental task, we must develop a plan to improve the management of health insurance and the surveillance of medical care delivery designed to preserve and improve the availability of the basic unit of medical care—the individual patient-physician encounter.

### Current Third-Party Fiscal Management

The essential transaction of the basic medical care unit is based on the encounter agreement that physicians are responsible for providing services and patients are responsible to pay costs.

Quality and propriety of medical services rendered have traditionally been physician responsibilities and he has been obliged to keep medical encounter records.

To aid the financing of modern health care, economic demand has created third-party payment plans in the form of voluntary health insurance for the majority, and tax supported health care programs for the poor, some chronically ill and the aged. Loose review and advisory arrangements for fiscal control and quality surveillance have developed between medical societies and third parties based upon traditional medical society efforts to foster quality in medical care.

For fiscal management, now accomplished by individual claims review, third-party payers have required more formal and detailed reports of their subscribers' encounters with physicians. Communication and processing of information has become an expensive and time consuming chore for all concerned. Many physicians have found it necessary to employ business management agents of various kinds. Physicians are overwhelmed by multiple insurance forms and reports. Patients are bewildered by the paperwork required in order to receive health insurance benefits. Third-party management

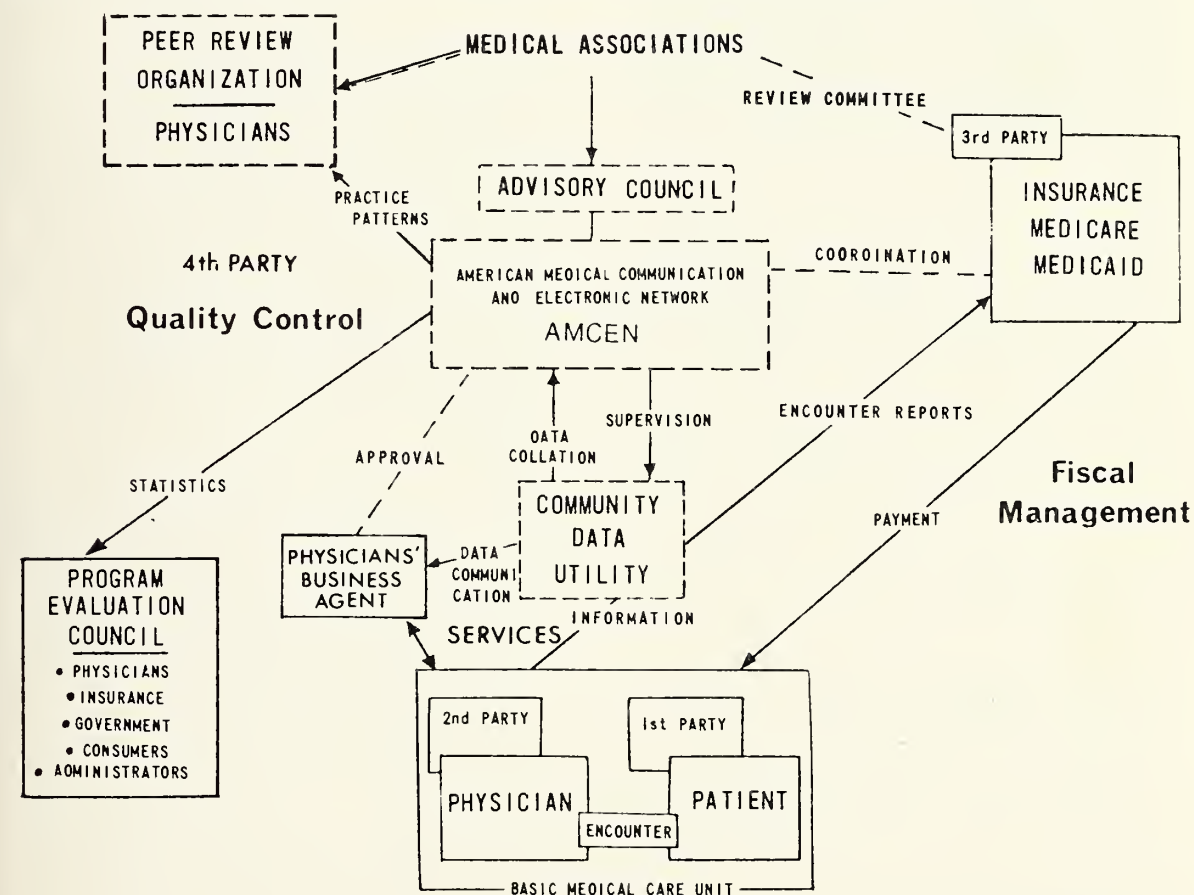


An acknowledged requirement for implementation of health care systems financed by insurance and delivered by a variety of methods is a more formal and effective application of traditional medical society surveillance for quality control through Peer Review Organizations.

An organization structured to expedite the development of a management information system for medical care is required to relieve the cumbersome

Modern electronic data processing and communication methods are now available to relieve the current costly paper congestion of third-party payment programs and to establish the medical data pool needed for effective peer surveillance.

Additional benefits would accrue to patient-subscribers in aiding them to receive prompt payment from their health insurance, and to physicians in relief from the overwhelming paperwork involved with reporting to third parties.



The "Fourth Party" organization for medical care surveillance under practicing physician control is prerequisite to successful implementation of private insurance financing and of plural methods for delivery of medical care. It will aid practicing physicians to make their influence effective in the development of future health care systems. It can be the voluntary system by which the medical profession can co-operatively provide statistical information to the "Review and Evaluation Councils" to be appointed by the Secretary of Health, Education and Welfare.

The obvious alternative to a voluntary "Fourth Party" organization will be for the Secretary's Councils to assume supervision of the entire health care information and control function.

Pilot projects are in progress to test the proposed "Fourth Party" approach for quality control under the advisory councils of medical societies cooperating with the "Third Party" for fiscal management and also providing services to aid the First and Second Parties—the patient and physician—of the basic health care unit to achieve more efficient and adequate health care. The pilot projects will be practical demonstrations of electronic data processing capabilities and of practicing physicians' willingness and ability to assume and fulfill responsibility for quality control of health care delivery.

### Summary

Congress will decide the methods of financing future health care and will mandate fiscal controls. I firmly believe that only practicing physicians can provide effective quality controls and develop adequate health care delivery systems through their voluntary efforts.

A modern system for communication and electronic data processing of medical care delivery information is required for:

- expeditious reporting of patient-physician medical encounters;
- efficient management of health insurance to maintain fiscal control;
- effective peer surveillance to achieve quality control;
- aid in facilitating development of alternative financing and delivery methods of medical care responsive to community needs; and for
- information useful to physicians for exerting impelling influences on the evolutionary processes producing future health care systems.

### A Pilot Project for Communication and Electronic Processing of Medical Encounter Data

Coordination of the many programs and facilities available in private enterprise and industry needed

to develop a communication and electronic network capable of providing automated medical care information systems will require an organization with executive ability to marshal and "broker" these services from private industry. The American Medical Communications and Electronic Network, Inc. (AMCEN), a nonprofit corporation, has been set up for this purpose, and the following proposed method of operation will be tested in pilot projects.

A data communication terminal will be provided in the office of each participating physician. This device may be easily used by any doctor's secretary for recording and communicating patient encounter information required for third party payment of medical charges.

A paper copy of the data will be produced in the physician's office and at the same time recorded on magnetic tape. The tape may be transmitted at a convenient time over standard telephone lines by the computer facility established by contract under supervision of AMCEN and the Medical Society Advisory Council.

The computer facility will transmit the required information by wire directly to the appropriate third party or provide the physician's office with a print-out of each medical insurance report.

The medical data pool will be protected for confidentiality under AMCEN controls, and information will be released only upon proper authorization from the physician and the Advisory Council.

The computer facility may transmit the physician-patient encounter information to an agent chosen by the physician with whom he wishes to contract for his office accounting and billing services and who will provide various types of data summaries including charges, procedures and diagnoses with proper coding.

When authorized by the physician, AMCEN will present the physician's listing of procedures and charges to the appropriate Peer Review Organization for prior approval, and with approval will arrange for prompt payment prior to claims review by the third party health financing agency.

AMCEN will maintain liaison with county, state, and national medical organizations for counsel concerning standardization, propriety, quality controls and relative value schedules.

AMCEN will contract with third party payers to provide them with the details of their subscriber's physician encounters in an efficient, timely and accurate manner with proper coding of procedures and diagnoses and prior certification of the peer approval of procedures and charges when available.

Physicians and patients involved will be accurately identified and all third parties involved in the en-

*(Continued on page 38)*

# Voluntary Health Insurance Industry

## *Way to Go?*

JAMES H. HUNT,\* *Simsbury, Connecticut*

NOT LONG AFTER President Kennedy was inaugurated, a reporter asked for his impressions of the first few months in office. He replied:

When we got into office, the thing that surprised me most was to find that things were just as bad as we'd been saying they were.

A year ago last October, I joined Aetna Life & Casualty. My background in health insurance was extremely limited. In the months since I began studying this complex business of delivering and paying for health services, I have concluded that things are just about as bad as the critics say they are.

Let me give you an example. From what I read and hear from doctors and others, it is not an isolated occurrence. Two months ago my phone rang. As my secretary was away from her desk, I answered it. It was the hospital saying they could provide a bed for my secretary. I had not known she had any health problem. That evening, a Thursday evening, she went into the hospital. The following Wednesday morning, after spending six nights in the hospital, she was operated on for a gallbladder condition.

After several months of reading about weekend stays in hospitals, about unnecessary use of the hospital bed for diagnostic testing, and about Roemer's Law which says that whatever the supply of hospital beds, they will tend to be filled, a flagrant example of all of this happens right under my nose. I asked a surgeon about this situation and he said there was no excuse for it unless the patient was suffering an acute attack, but this was not the case.

Primarily as a result of the rampant inflation in hospital costs in recent years—and when I say hospital costs I mean not only room and board charges but the upward trend in per capita use of the hospital—health insurers now stand on the edge of oblivion as the politicians respond to the cry for some solution, any solution, to the upward spiral in health care costs.

While there are those who would argue that in the great march of history a program of national health insurance for everyone is in the cards as a

matter of absolute inevitability, I think there is an equally good argument that, absent cost pressures of recent years, Medicare and Medicaid would now be more acceptable national programs responding to the needs of those private carriers cannot reach.

I singled out hospital costs a moment ago not only because the rate of inflation has been greatest in this area, but especially because such costs represent

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**The present health care problem is discussed in the light of past attitudes and practices of the health insurance industry, medical profession, and government. The needs, in the view of the insurance carriers, are considered and the six points of the "action program" embodied in the health industry's legislative proposals are presented.**

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nearly 40 per cent of the national health care dollar, and about 60 per cent of the insurance dollar.

As a result of the inflation in health care, some of the rate increases we at the Aetna have had to deliver to employers we insure have been nearly unbelievable. Not a few employers are now asking themselves this reasonable question: "Could our employee health insurance plans result in more stable, predictable costs if an expanded Medicare, or the Kennedy program, or whatever, were enacted and financed through payroll taxes?" Thus, Thomas Watson of IBM now says that he supports such a solution as Kennedy's and admits such a thought would have been heresy ten years ago.

And so, the question for health insurers is no longer whether there will be national health insurance—I find no one in my company or in the industry who thinks about the issue who believes there won't be—but rather whether the system of national health insurance which emerges from the legislative process will include a role for us, and I mean a meaningful role, not just a bill-paying role under a giant Medicare program.

We are optimistic on this point.

In the first place *we* believe most Congressmen believe that health insurers have much expertise to

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\* Director of Government Relations, Aetna Life and Casualty. Presented at the 112th Annual Meeting of the Kansas Medical Society, May 11, 1971, Topeka.



contribute and are not as much a part of the problem as Senator Kennedy would have the public believe.

Frank Purvis, President of Pan-American Life of New Orleans, tells of a problem he encountered in his early years as Deputy Commissioner of the Louisiana Insurance Department. In those days, in Louisiana, there were many small, fraternal life insurance companies which sold small life policies, about enough to cover burial expenses. Thus, they were known as burial policies. His examiners discovered one day that one of the companies, a colored company it was then called, had become insolvent. He summoned its officers before him and endeavored to ascertain the source of the trouble. To a man, each of its officials blamed the President for mismanagement. The President made no comment until his associates had left the room, then said, "Gentlemen, they paint me much blacker than I really am!"

Well, perhaps the insurance industry is being painted black when it deserves only grey. We are accused of not being able to control costs and of reaping profits from sickness. It is true that we can't control costs all by ourselves. We are not in the business of providing the services in the first place and, in the second place, our contracts bind us legally to pay bills as rendered in all situations but those involving outright fraud or abuse. Further, our clients, the employers we insure, want us to pay the employee's bills. Otherwise they, the employers, would catch it from the labor unions.

As to the second charge—we are making lots of money—that's simply funny, at least for the largest insurers who write almost 60 per cent of the nation's hospital and medical coverage. In the five years ending December 31, 1970, these insurers' net losses were over a quarter of 1 per cent of premiums. These are true losses and are not offset by any hidden gains from investment income.

The health insurance industry will survive, as Tom Wicker of *The New York Times* put it, only to the extent that we can contribute something to an effective workable national health program.

We believe we have contributed a great deal in the last 25 years to the good health of Americans. That we have not been able to do the whole job is no reason to be apologetic. In fact, we are proud of our accomplishments. But this does not blind us to the reality of the nation's health care problems.

It seems to me that the survival of the health insurance industry as we know it today is directly related to the survival of fee-for-service medicine. Our skills are keyed to managing efficiently the flow of paper work that fee-for-service implies. The principal alternative, capitation payments to comprehensive health care organizations (HMO's if you wish) has the effect, if you think about it, of transferring

the risk to the provider organization. Further, there are no organizational skills involved in making lump sum payments to such organizations.

In turn, survival of the fee-for-service principle is directly dependent upon containment of costs under that principle, in my opinion.

We are reasonably optimistic that costs can be controlled, that the rate of increase from year-to-year can be brought into line with the consumer price index. Among these reasons are:

1. There has been considerable tightening up under the government programs of Medicare and Medicaid. In 1970 Medicare spending increased 8 per cent compared with 23 per cent the previous year. (Medicaid increased 18 per cent as compared with 26 per cent the prior year. The Medicaid increase obviously includes expenses due to a significantly greater number of persons covered.) Now proceeding through the Congress are further cost tightening provisions in these programs.
2. Interest in medical care foundations, which are confined principally to the west coast, has been increasing rapidly in the last 18 months as doctors realize they must take steps to police their own practices if they don't wish to be on a government salary in the near future. The better of the foundation programs, at least in my opinion, include pre-admission certification for non-emergency hospital use. My understanding is that the medical care foundation in Sacramento County, California, has reduced hospital utilization about 20 per cent.
3. Insurers are coming to the point of wanting more structured review mechanisms for private programs. We have been developing statistical profiles at the Aetna for use in our group health business.
4. There is a quickening of interest in many states in seeking enactment of certificate of need legislation in order to combat the unneeded expansion of hospital and other health care institutions' facilities and services. There is also some interest being generated in putting hospitals under a kind of public utility rate regulation.
5. Doctors are beginning to speak as if they really might make peer review work, although I am exceedingly skeptical about this. Dr. Russell Roth, Speaker of the House of Delegates of the AMA, recently was quoted as follows:  
 "We are pioneering in ways to make of the practicing physician an effective guardian of the public purse in respect to expenditures for medical care. Frankly, my own enthusiasm for this is unbounded since I feel that in it lies the

greatest potential for meaningful cost control, economy, and a guarantee that dollars spent shall be dollars well spent. This is something that can't be legislated."

Dr. Russell's words are encouraging if they later are translated into action. My principal disagreement with him would be that effective peer review may have to be legislated, as in the proposal of Senator Bennett for professional standards review organizations, which I understand has a good chance of passage.

It occurs to me that years ago, before the widespread development of third-party payment mechanisms, physicians used to treat their patients with a view toward the costs of such treatment in the case of those of modest income. By and large, the medical profession now is at the other extreme of the pendulum, exercising extremely little accountability for expenditures ordered on behalf of patients. It is not necessary to blame the physician for this; in a sense, he is a victim of the system, of insurance contracts oriented to the hospital care, of the public perceptions that hospital care is the only safe care, of malpractice suits, etc.

Irving J. Lewis, in an article in *Scientific American*, puts it this way:

The physician is motivated, by education and a kind of technological imperative, to utilize the latest procedures, the most sophisticated tests, and so on. This attitude influences his decision as to who does and who does not require hospitalization, the highest-cost component of medical care. To the physician, cost considerations—the patient's, or the insurance company's, or the Government's—are secondary to what he considers to be the best and most advanced medical practice.

If anything seems clear to me in all the debate, it is that, in one way or another, the physician will once again have to exercise accountability not only with regard to quality of service, but its cost. Consider it this way. The individual physician, on the average, orders for his patients services totaling something like \$250,000 each year. He is at the point of control of that flow of money. He must assume some responsibility in this area, or the government will do it for him. To me, it is as simple as that.

The \$64 question, then, would seem to be whether all of these pressures for increased cost controls can begin to produce results before the Congress passes some form of national health insurance. If some success can be achieved, it will greatly increase the chances that whatever legislation emerges will include a meaningful role for health insurers.

Senator Russell B. Long of Louisiana was recently quoted by the Associated Press to the effect that uncontrolled rises in health care costs have generated a strong demand for national health insurance by pricing many people out of the private insurance market. But Long, who opposes broad national health insurance programs, said the pressure for an all-out plan might be relieved if costs could be brought under control.

With these somewhat gratuitous comments behind me, let me tell you about the health insurance industry's national health insurance proposal known as "The National Healthcare Act of 1971," which has been introduced in the House of Representatives by Representative Omar Burleson of Texas and others, and which has been introduced in the Senate by Senator McIntyre of New Hampshire and others.

The basic principle we began with was that we must work simultaneously on the organization and delivery system and on measures to finance quality health care for everyone.

The Burleson/McIntyre bill includes six separate programs. The first five deal with improving the organization and delivery of health care services, while the sixth addresses itself to the financing problem. Let me take them up in order.

*First*, we must increase the supply and improve the productivity and distribution of health manpower. To this end we propose improved student loan programs covering a greater share of the cost of medical education with more rapid repayment of the loans available through service in areas of critical need. We also propose that federal grants be made to schools that specifically train health personnel to provide ambulatory care. To meet the immediate needs of rural and inner city areas, we propose a five-year, federal-grant program to health professionals for service in such areas.

Our *second* program would develop ambulatory health care services to promote health maintenance and reduce costly hospital use. Much of the diagnosis and treatment currently provided hospital patients ought to be done on a "walk-in, walk-out" basis. Recent experiments indicate that 20 to 25 per cent of all surgery now done on an inpatient basis could be performed in ambulatory facilities if they were available.

To this end, the bill would extend present federal programs of hospital construction grants and hospital and outpatient facility loan guarantees to encourage private and public financing of comprehensive ambulatory health care centers, particularly in areas of special need. We would also make such grants and loan guarantees available to subsidize operating deficits of ambulatory health care centers for the first three years of operations. Not the least in importance by any means, we propose, through fed-



eral standards for health insurers, that all health insurance plans contain ambulatory care benefits.

The *third* program calls for substantially increased national support for comprehensive health planning at the community and state levels. Planning is necessary to avoid unnecessary duplication of facilities and services as well as to encourage new approaches to effective delivery of health care.

Our *fourth* action program attacks the problem of containing cost, which, as I have indicated previously, is crucial if health insurers are to survive with a major role in the health care system of the future. We propose the following cost and quality controls:

We would require certification of need by the appropriate comprehensive health planning agency before a request for federal participation in the financing of health facilities or services could be granted.

Payment for health care services under federally-supported programs would be tied to prevailing fees and to peer review of those professional services that fall outside of professionally established guidelines. Review and approval would come from an appropriate health services review organization or, in its absence, by the organizations administering federal programs.

Hospitals and other health care institution charges would be subject to approval in advance for a period of a year by state health care institutions cost commissions which would have to be created in each state. Hospitals and other health care institutions would be required to:

- a. Have an active review committee to check the appropriateness and quality of services.
- b. Use a standard system of accounting.
- c. Use "prospectively approved charges" for all patients.

If all hospitals and similar organizations were required to set their fees in advance, they would have a much greater incentive to control costs than is now the case under the retrospective adjustment provision contained in nearly all Blue Cross hospital contracts.

Our *fifth* program proposes that there be created in the Executive Office of the President, a Council of Health Policy Advisors, analogous to the Council of Economic Advisors. The Council would, among other responsibilities, develop recommendations for national policy in the health care field. Too much of our gross national product is now devoted to health care—about 7 per cent—with virtually no provision for developing a national policy on where we are going.

Our *sixth* action program would make comprehensive health insurance available to everybody. We would do this in the following way:

We invite federal standards for health insurers. These standards would apply principally to benefits included in health insurance contracts. As I have mentioned, the benefit standards would include an appropriate mix of ambulatory, preventive, and institutional care benefits.

We believe it is necessary to phase in the federal benefit standards on an established time table, as the services become available to meet increased demands, as well as to permit an orderly transition under collectively bargained employee health insurance programs.

We propose a system of federal income tax incentives to help assure that the federal benefits standards are made available. To strengthen existing incentives, we propose that the federal income tax deduction for health insurance expenses be allowed for 100 per cent of the premium only for those plans whose benefits meet federal standards. If the coverage does not meet these standards, the tax deduction would be limited to 50 per cent of the expenditure.

We would establish in each state a private insurance plan to cover the poor, near poor, and those previously uninsurable for reasons of serious health impairments. Uniform standard benefits for the poor and near poor would be subsidized by federal and state funds. The premium cost would be paid in full for those on public assistance and others with very low income. The contribution for those at somewhat higher income levels would be set at a level scaled to income and family size.

Each state plan would be a pooled arrangement underwritten by all private health insurers, profit and nonprofit, in each state. One carrier or group of carriers would be designated by the State to administer the plan. The premium rates would be regulated by the states and by HEW. This arrangement would be analogous to, but designed to be more efficient than, the assigned risk plans for auto insurance in each state.

Medicare would not be affected by our proposal. Eventually, the state plan would eliminate the need for Medicaid. For the poor, the indignities of the present means test would be replaced by a simple report of prior year's income. The state plan would also be available to those persons who are currently uninsurable and unable to obtain health insurance. The benefits under the state plans would initially be greater than those required for full tax deductibility under private plans inasmuch as heavy cost sharing of health care by the poor is simply impossible.

The benefits of our program have been designed to cover items that may be incurred during illnesses which result in catastrophic health care expenses. Further, by 1979, it is contemplated there would be no maximum limits on ambulatory care benefits and only realistic limits on institutional care. Benefits provided could exceed \$50,000.

For certain of the benefits included in the federal standards, a modest amount of cost sharing or co-payment would be required to reduce unnecessary overuse of services and facilities and thus help keep costs down. It should be emphasized, however, that there would be a realistic aggregate limit each year on co-payment related to family income. In this way, no family would be unduly burdened by expense or deterred from obtaining needed care.

What would such a program cost?

For this program in its first year of operation, federal government expenditures would increase by some \$3.2 billion. Of the total, \$2.6 billion is for subsidizing the state insurance pools for the near poor, and \$6 billion for improving the organization and delivery of health care. The major cost impact would be felt by employers who chose to upgrade their health insurance packages to meet the federal standards in order to continue deducting 100 per cent of their expenses, and by self-sufficient individuals who elected to purchase policies meeting the federal standards.

Let me conclude with some comments on the role of insurance companies in our economy and their qualifications to be a part of whatever new health care system is enacted.

Victor Lutnicki, Executive Vice President of John Hancock, points out that our industry does not do very well in the "charisma" department. People only need us when things go wrong. As indispensable as they find us in practice, there is probably always lingering resentment at having to fork over hard earned dollars to us. In health insurance, our job is made doubly difficult because we affect the privacy of the relationship between the patient and his physician. Only recently has it begun to be tolerated that an insurance company may affect this sacred relationship by having some say about whether the services sought by the patient, or provided by the doctor, were appropriate.

If we are to contain costs—and it is my thesis that the cost of medical care is the name of the game in Washington—then there will obviously have to be greater cooperation between physicians and insurers if we, as insurers, are to remain in business and if you, as doctors, are to avoid becoming GS-18's on the federal government's pay scale. (I hope you'll appreciate that by giving you a GS-18, your salary would be in excess of \$30,000 a year.)

One does not have to be around the health insurance game very long to realize there is only so much health insurers can do to contain costs if they do not have the cooperation of physicians. To the extent that the insurer and the physician are in an adversary relationship, the physician must win in all but the most outrageous claim determinations. This is because only the physician can say finally whether the treatment was proper.

Even if an insurer, by contract, pays only an amount based on some profile which the insurer develops, there will be little opportunity to affect the averages, for the profiles must be based on the averages. If I read the current climate correctly, it is necessary to affect the averages, as in the Sacramento Medical Care Foundation mentioned earlier, if we are to gain some support from middle-of-the-road politicians.

The Health Insurance Association of America has been at work trying to set up medical care foundations with medical societies in which claims in the area would be screened against utilization guidelines, hopefully tough ones, established by the local medical society. Claims falling outside those guidelines would be subject to peer review by a committee of the society. Thus, the weight of the society would be placed behind these evaluations and the need for the insurer to argue with the physician would be eliminated. Such a foundation is now getting underway in the greater Minneapolis area. Of course, the amendment proposed by Senator Bennett for professional services review organizations, if it passes, would make such plans mandatory.

The record of the health insurance industry has been, for the most part, a good one. Approximately 90 per cent of Americans under age 65 have some form of health coverage. While there are a lot of nickel and dime policies floating around, in the defense of which we can only claim that some health insurance is better than none, it is a fact that three-fourths of this 90 per cent is protected by group insurance which has paid 80 per cent of their covered medical bills.

Because of our reluctance to interfere with the patient-doctor relationship in the past with respect to claims control, and because we have not been able efficiently to cover all segments of society in the United States, we now stand accused by many of "failing miserably."

It is suggested that our administrative costs are excessive. In fact, operating costs for large groups (exclusive of taxes) average about 4.5 per cent of premium. The largest insurers in the country had average operating costs for groups of all sizes of about 7 per cent, again excluding state and federal taxes.

*(Continued on page 38)*

# Innovations in Medical Care: The Foundation Concept

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## Introduction

Everyone wants into the act at this time. Basic to all proposals for changes in the health care delivery system, whether made by the American Hospital Association, in Senate Bill 3, the State Departments of Health Care, Labor Unions, or corporate entities in no way related to medicine, is the idea that medical care can be reduced to a corporate status with all forms of health providers as employees of a corporate entity. The method and manners of the delivery of health care under such corporate structures would be determined by a board of directors selected by some as yet undetermined method and might, or might not, include providers of health care. These proposals are so strongly backed by labor, by legislators, and by many others interested in gaining control of the health care system that we, as a profession, cannot ignore them and cannot say that if we pay no attention to them, they will go away, because they will not. We must look at what we are doing and how we can do it better, how we can control costs and how we can direct and control the changes which will inevitably take place in the systems of delivery of health care.

The Foundation concept is local in origin, operation, and control. It is innovative. It is a concept not afraid to develop new methods and new ideas and offers to you, the practicing physician, the muscle that is needed to deal with legislators, labor leaders and professional organizers.

## What Is a Foundation for Medical Care

It is a committee of a local medical society appointed by its Board of Directors to run a nonprofit corporation totally under the control of the parent organization. Like any other committee, it reports periodically to the executive body of the medical society and seeks approval of its actions.

The Foundation Board of Directors elects its own officers and appoints its own committees, three of which are of major significance: Minimum Standards, Peer Review, New Programs. Insurance pro-

grams which meet or exceed the minimum standards are sponsored by the Foundation and all provider claims are received in the Foundation office and subjected to clerical review and, where indicated, peer review. The Foundation is the final authority in the determination of what services shall be paid.

## Foundation Functions

### *Minimum Standards*

The purpose of minimum standards is to assure the purchaser of a quality health insurance package, with certainty of coverage and the service concept

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**At this meeting, the Kansas Medical Society intends to make some kind of a decision on the formation of a Foundation. It is my intent to make very clear to you the value and use of Foundations by our profession in controlling the direction that the health care system will take in the future.**

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for physician members. Minimum standards need constant upgrading and change to keep pace with reality. Presently, we are considering adding to them the requirement for coverage of voluntary sterilization and psychiatric care.

The physician reimbursement schedule is reviewed yearly and any changes made in it must be approved by the membership.

### *Peer Review & Utilization Control*

There are clerical guidelines and claims which exceed them go to Peer Review. This does not mean that anything is wrong with the claim, merely that a claims clerk has no discretion and that only a peer may either approve or alter a claim which exceeds these guidelines.

The Peer Review physician has several options: (1) he may approve the claim and return it for processing; (2) he may delete those services he considers unnecessary; (3) he may request additional information from the provider; (4) he may refer the

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\* President, United Foundations for Medical Care Service Corporation.

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claim to another reviewer with more expertise in that field; (5) he may refer it to the Peer Review Committee. Approximately 15 per cent of claims go to Peer Review, half of which are immediately approved and returned for payment. The remainder require additional information and study, but ultimately half of these will be approved for payment as submitted. Thus, between 3 and 5 per cent of all submitted claims will be changed by the Peer Review mechanism.

The Peer Review Committee must represent all of the specialties and all of the geographical areas in the Foundation, and will vary in size from 15 to 50 persons. Because of the responsibility they assume, Peer Review personnel are paid for their time.

I would remind you that, while 18 per cent of the health care dollar goes directly to the physician, 85 per cent of the health care dollar is expended at our direction. To do adequate Peer Review and Utilization Control, it is essential that guidelines for claims rejection by clerks be established not only for physicians, but drugs, hospitals, nursing homes, and the supportive services. For hospitals and nursing homes, Peer Review and Utilization Control must be prospective rather than retrospective, because physicians are responsible for the admission of patients to these facilities and for the services rendered therein.

Retrospective review is applied in the supportive areas such as drugs and physiotherapy. But payment for these services cannot be denied because they were, in fact, ordered by a physician. When abuses are detected in this area it becomes an educational problem, education of the physician as to what is and is not good medical practice.

Peer Review must also measure quality of care and cannot confine itself solely to a search for overutilization and abuse. It must look for underutilization, lack of care, or impropriety of care. This is a far more difficult area to evaluate and to do it, both the clerk and the Peer Review person must have before them a profile which shows the total spectrum of care rendered a beneficiary and, also, the diagnoses.

### *Innovations*

From the very beginning, Foundations were innovative, for their first steps were the establishment of adequate minimum standards for health insurance policies and a program of Peer Review and Utilization Control.

Since 1966, there has been a sharp escalation in the costs of medical care and an increasing involvement of governmental agencies in the payment for and the delivery of health care. Labor unions have become exceedingly critical of the health care indus-

try and label it a cottage industry. There has been increasing emphasis on prepaid health programs, group practice, and closed panel programs.

Foundations have worked steadily to devise methods and programs for coping with these problems and to find methods of reducing costs, assuring quality of care, and bringing to deprived areas programs for the better delivery of health care.

Since 1966, we, in California, have come to consider a Foundation as an open end group program.

### INNOVATIVE PROGRAMS

Hospital Utilization Committees are a fact of life, a requirement of the Joint Commission and the Medicare-Medicaid law. In some hospitals, they have been exceedingly effective, in others they have existed only on paper. There have been scanty guidelines for their operation in terms of days of stay, extensions of stay, diagnostic admissions, and the placement of a patient in a lesser care facility or at home with assistance from the visiting nurses and Home Health Agency.

### CERTIFIED HOSPITAL ADMISSIONS PROGRAM

The Sacramento Foundation recognized this problem and devised the Certified Hospital Admissions Program. Norms of stay for disease entities and surgical procedures were established. Elective admissions or extensions of stay beyond the norm require prior approval from a member of the Peer Review Committee. Prior approval guarantees the hospital payment for services rendered. Failure to secure prior approval places the burden of payment on the patient. Approximately 90 per cent of all requests are approved without delay; the other 10 per cent need investigation, either in terms of a consultation or additional information. The patient's physician has a right of consultation at any time he is denied approval for an elective admission or an extension of stay, and the consultant's opinion in such matters is final. Emergency admissions are certified after the fact. The essentiality of this program is that it is physician-controlled at the local level. The standards of stay, determinations of admission, extensions of stay because of complications, are all determined by local physicians in active practice in the area in which the action is taking place. This is far superior to having a retired armed services administrative person, sitting at a distance, making the decisions without any knowledge of the case, the hospital, the physician, or the problem. This program put the problem of hospital utilization and cost control squarely in the hands of the local medical society.

I can say, I am not fond of peer review and utilization controls. I feel basically I am honest, I try to do the best I can and not keep people in the hospital longer than is necessary, nor to render services

they do not need. I am also human and respond to pressures like the Thursday Syndrome. When I tell a patient on Thursday, "You can go home tomorrow," she often says, "Saturday is my husband's day off and I'll wait until then." However, with the backing of a committee, if I can say, "You can stay, but you will have to pay for it," she will probably go home.

There are several variants to the hospital utilization control method described and each should be developed according to the area in which it will operate. The basic concepts will remain the same: the establishment of guidelines of stay, authority to a committee to enforce these guidelines, and the placement of the financial responsibility for overstay and unneeded admissions on the patient, not the insurance company or the government.

As a profession, it gives us a handle on the tonsillectomy and hysterectomy artist, the one who sends his patient to the hospital for a diagnostic workup, and those other areas for which we take much criticisms and, in many instances, rightly so.

The Sonoma and Mendocino-Lake County Foundations joined together and established a group health insurance program for the recipients of Medicaid in their area. Pacific National Life Assurance Company underwrote the risk, provided management and data processing. The Foundations brought together, in a single committee, representatives of all of the other providers of health care; i.e., hospitals, nursing homes, pharmacists, dentists, podiatrists, physiotherapists, chiropractors, optometrists, ambulance drivers and the visiting nurses, so that they became participants in its development and organization and, later, its management. Each provider group had its own peer review unit. Computer prepared profiles of all services rendered to the beneficiary, by all providers, led to the detection of provider practices of poor quality, of the need for education of certain providers, and the detection of the few recipients who abused the program.

The AFDC group is a fairly homogenous one and the cost of care is probably a good indication of the true cost of first dollar total health care per person, per month.

The degree of savings achieved in this program applied statewide in California, or applied to other governmental programs, would produce dollar savings of a magnitude that one hesitates to project.

The Monterey Foundation established a clinic for migrant workers which has had a significant impact on the health care of this group. San Joaquin, on a smaller scale, has done the same thing.

Four Foundations, San Joaquin, Sacramento, Stanislaus and Santa Clara, have worked with the Cannery Workers' Union on a multiphasic screening

program for all of the members of the union. This has been in existence for three years and much has been learned about the problems and pitfalls of multiphasic screening and its values. Hopefully, this program will be extended in other directions.

San Joaquin County has demonstrated that it is possible for the provider to participate in the risk without serious financial problems. This program is still under study as to its effectiveness, and the risk involved.

Six other counties have joined together in a study of a prepaid insurance program for Medicare and Medicaid recipients.

The United Foundations has been working with a group of insurance companies and the State of California in the development of a computerized program for handling the massive amounts of insurance claims that come through Medicaid and Medicare so that the clerical screening can be done by computer. There is also being developed what might be called a model treatment program which permits the measurement of the quality of care rendered against certain parameters.

#### ECONOMICS

The CHAP slide demonstrated a 17 per cent savings in dollars on a private insurance program and at least a 10 per cent savings in dollars in the Medicaid program. Percentages of this kind applied to hospital costs throughout the country would produce a tremendous reduction in health care costs and make available many dollars for other purposes, either in increased benefits or reduced costs. The Tri-County Project demonstrates a reduction of approximately 20 per cent in Medicaid costs and, if applied to the total costs of Medicaid, both in California with its two million recipients and country-wide, would produce tremendous savings in the taxpayers' dollars. Tri-County is applicable to Medicare and could produce much of the budgetary savings that Congress is talking about.

#### *Legislative Proposals*

##### P.S.R.O. OR P.R.O.

Approximately 25 per cent of health care dollars is now furnished by a governmental agency through such programs as Medicare, Medicaid, and Champus. Legislators are deeply and rightfully concerned with the need for control of these expenditures, particularly in view of the steady increase in costs that is taking place.

It is a certainty that some type of peer review program to control these costs will be mandated by Congress. The Foundations' concept furnishes a ready-made answer to these proposals. They possess



the information, standards, personnel, know-how and structural organization to meet the proposals. They have the distinctive advantage of placing peer review and utilization control where it belongs, locally, so that distasteful as these may seem to be, at least they will be done at our own level by the people we know under our own control. It is our obligation to be certain that these peer review proposals are so written that a society sponsored group, such as a Foundation, does become the Peer Review and Utilization Control Unit. If we do not take this position and this responsibility, it will unquestionably be delegated to some group willing to do the job, and the chances are excellent that it would be a group not especially interested in physicians, patients or providers, but more interested in the establishment of an organizational structure giving them the control of the provider of health care.

#### HEALTH MAINTENANCE ORGANIZATION

This proposal, currently before Congress, proposes the establishment of a nonprofit corporate entity bringing together all providers of health care to furnish the necessary health maintenance services such as hospitalization, ambulatory care and preventative services. It would provide these services for a fixed sum per month, per recipient. It must cover Medicare Parts A & B, and also must include among its enrollees at least 50 per cent under age 65. It can be established by any nonprofit corporate entity, whether a part of a medical society, such as a Foundation, or hospital or medical school, or it can be simply a corporate entity established for the purpose of operating an HMO by anyone or any existing organization, whether connected with medicine or not. Stress is laid in the bill on provider incentives such as risk taking to provide better services at less cost and to develop better methods of delivery of health care. Stress is also laid upon the concept of the closed panel and the prepaid group type programs as being a more economical method for the delivery of health care than the open end group with a fee-for-service concept. Each HMO would cover a specific geographical area; however, there could be more than one HMO within an area.

The Foundation concept offers medicine the ideal unit for bringing together all of the providers of health care into an organizational structure which can fulfill the requirements of the HMO and still maintain the fee-for-service concept and the independence of each of the providers. It can also fulfill the requirements of the development of new and innovative programs that would reduce the cost of health care delivery and meet the requirements of adequate utilization control and assurance of quality of care.

The Tri-County Project I described earlier is in essence an HMO, except for the lack of provider risk. The CHAP Program, which I described, is one of the innovative programs which would help reduce costs. The Peer Review and Utilization Controls and quality monitoring, which are fundamental characteristics of the Foundation, also meet the requirements of the HMO.

Medical societies, either through Foundations or some similar organization which they develop, can and must be the group which meets the requirements which appear in the Health Maintenance Organization proposal. There is no reason why an HMO organized by a Foundation cannot work effectively and well with closed panel groups in its area, hospital based groups or any other structure that furnishes medical care. In fact, it offers the greatest possibility of bringing together, in a single unit within a given geographical area, all of the varieties and methods of delivery of health care.

#### THE AMERIPLAN

This is a proposal of the American Hospital Association. In brief, it envisions the establishment of health care corporations throughout the United States, with all of the provider groups as members of the corporate entity and employed by them.

#### SENATE BILL 3

Senate Bill 3, the Kennedy Bill, is the National Health Insurance proposal for the federal government to pay all of the costs of medical care for all citizens of the United States. The Bill is so full of defects that if we avoid the natural tendency to oppose it simply because it is national health insurance and because its actuarial projections are unrealistic and, instead, keep pointing at the defects that must be corrected and forcing action on these multitudinous defects and suggesting alternatives, this bill can be beaten.

#### Summary

I have made it sound like Foundations are a Prince Charming riding a white charger to the rescue of the medical profession. This is not true. It is a method that can be adopted by the medical profession and for that matter by all providers of health care to save themselves from unrealistic legislation and other proposals for the control of costs and the control of utilization. To make them effective will require the devotion of many of us in terms of time, responsibility, the acceptance of criticism and the willingness to be innovative.

*(Continued on page 38)*

# Can You Be Your Own Man in the 1970's?

## *Losing Your Independence?*

CARROLL V. DOWDEN,\* *Hillsdale, New Jersey*

CHANGE IS HAPPENING fast in the field of medicine—not only in some clinical areas, but also in economics. You might find it exciting, even exhilarating. Or you might be upset by change and yearn for the good old days when a doctor's role was less ambiguous, when less was expected of him, when his accomplishments, however modest, were obviously appreciated. You might even be tempted occasionally to follow the lead of many young people who simply drop out. Retirement, not necessarily in the grand manner, is within the grasp of some of you today. But chances are you won't quit—not until you have finished what you set out to do in terms of caring for your families, your patients, and fulfilling other ambitions you have.

So, to a very large extent you are going to be stuck with the change that is swirling around you. No one knows precisely what the forces now at work in medicine will produce. But when you sit back and think about the major trends that are reshaping the practice of medicine, you gain a new perspective and appreciation of what you ordinarily see only in fragments.

It seems to me that it adds up to something of a coherent picture. The doctor is being called upon to cope with all kinds of issues. Some of them he was trained to handle. There is no doubt in my mind about the typical doctor's basic ability and determination to keep up with changes in the science of medicine, while continuing to refine his techniques in the art of medicine. And that can be a very demanding two-pronged goal in itself. But these days that is only part of what is expected of a physician. Circumstances also thrust him into the role of economist, social planner, community leader, not-so-small businessman, and so forth. Speaking from the standpoint of the physician in private practice, you might call this the age of complexity, of interdependence of people and things, of forces and systems. It raises this challenging question: Can you, as a practicing physician, be your own man in the 1970's? The answer is far from clear cut, as we shall see.

One of the ways in which your professional life is going to become more complex and intertwined with third parties is through the probable adoption

of some form of national health insurance within the next one or two years.

With the advent of national health insurance—regardless of whether it follows the tax-credit plan espoused by the American Medical Association, the

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**Urgent demands are being made on doctors by patients, government, insurers, hospitals—even other M.D.s. Yet physicians are prospering as never before. The net effect is a new and wider range of interest and action, of dependence and opportunity.**

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health-maintenance approach of the Nixon Administration, the something-for-everybody approach of Senator Kennedy, or the middle-of-the-road approach of the private health insurance industry—the fact remains that it will create a great new demand for medical services. And that in itself can pose a severe problem.

As Dr. Sidney R. Garfield, founder of Kaiser-Permanente, has warned: "Medicare and Medicaid—equivalents of national health insurance for segments of our population—have largely failed because the surge of demand they created only dramatized and exacerbated the inadequacies of the existing delivery system and its painful shortages of manpower and facilities. It is folly to believe that compounding this demand by extending health insurance to the entire population will improve matters. On the contrary," Dr. Garfield continued, "it is certain that further overtaxing of our inadequate medical resources will result in serious deterioration in the quality and availability of service for the sick."

Are voters really clamoring for change? One would think so, judging by the rhetoric of such men as Senator Kennedy. In the latest issue of *Medical Economics* he is quoted on the subject of health care in America as saying, "I don't think it's just a question of crisis in disadvantaged areas. The complaints come from middle America just as readily as from the disadvantaged. I think, gentlemen, that the American people feel that there is a crisis of enormous proportions."

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\* Executive Editor, *Medical Economics*.

Presented at the 112th annual meeting of the Kansas Medical Society, May 11, 1971, Topeka.

Maybe so, but in a recent survey, *Medical Economics* tried to get an idea of how the American people feel. We questioned patients as follows: "Medicare pays many doctor and hospital bills for people aged 65 and older, using Social Security tax money for this purpose. Would you favor a great enlargement of this program so that it covers you and everybody else?" Among respondents, 24 per cent said yes, while 49 per cent—almost exactly twice as many—said no. The balance had no opinion. That hardly seems to support Senator Kennedy's assertion that "the American people feel that there is a crisis of enormous proportions."

In that same survey, we asked patients about their attitudes toward doctors' fees. A total of 73 per cent said they thought their family doctor's fees are about right, while 5 per cent called them too low and 22 per cent called them too high. That is very surprising to me. I think the question by its very nature is apt to draw a high percentage of people who complain that costs are too high. Suppose, for example, you asked a series of men on the street if they thought automobile prices were about right, too high, or too low. I have to suppose that more than 22 per cent would say too high. And I think the same would be true if the survey had to do with food prices or housing costs.

It is popular now to dwell on the problems of minorities—and that is constructive—but in the process we sometimes seem to lose sight of the fact that a majority of patients are actually being served very well at present. I hope I am not being blind to the over-charging that does exist among doctors. As a matter of fact, I have personally felt highly charged for medical services on more than one occasion. And I hope I am not insensitive to the problems of finding a doctor, particularly acute in poverty areas, whether urban or rural.

Granted there are serious problems. But how much hard evidence really exists that we will all be better off if doctors are pushed into other types of practice? The often proposed remedy for our problems is prepaid group practice. How much evidence is there to demonstrate that prepaid groups are more efficient or of higher quality than traditional fee-for-service practice? There is some evidence. An analysis by the Department of Health, Education, and Welfare shows, for example, . . .

that hospital days per 1,000 persons per year total 744 for so-called health maintenance organizations (i.e., prepaid group practices) versus 955 for non-H.M.O.s,

that tonsillectomies per 1,000 persons per year total 47 for H.M.O.s versus 94 for non-H.M.O.s,

that typical health care costs for a family ran

\$224 in an H.M.O. versus \$252 in one insurance plan,

and the study goes on to cite any number of similar findings.

The data, by the way, are standardized for age, sex, location, etc. And yet this so-called proof of the superiority of prepaid groups, which is being used now in the push for national health insurance, dates back in some instances as far as 1958. I don't need to tell you that a lot has changed since then. True enough, we face a doctor shortage and are not able to provide adequate care for all. But we also face an information shortage. We still lack the evidence to say with real certainty that this or that is the best way to build a better system.

My object is not to reinforce the prejudices against change that perhaps already exist here. But I am opposed, as I am sure you are, to revolution when the present system has much in its favor, when orderly evolution can alleviate many existing problems, and when there is very little compelling evidence that restructuring the delivery system would work. I think that all of us—doctors, legislators, editors, and all the rest—should make a more penetrating analysis of the alternatives. And that, of course, is exactly what you are contributing toward by your presence at this meeting. Meanwhile, we are hearing figures like \$70 billion as the possible annual cost of national health insurance. Might it not be better to spend a large portion of that on some of the root causes of illness like environmental pollution, overcrowding, automobile safety, and mental health? I do not pretend to know the answer, but I recognize it as a very good question.

In any case, there is little doubt about the momentum that has been building up in favor of national health insurance. The only thing that it seems certain to bring with it is more work for you. And, more than just incidentally, it is apt to bring its full share of forms and regulations and abuses of all kinds.

It looks as if national health insurance is apt to pass in a form that

freed more patients from worries over the financial consequences of seeking medical care,

steers doctors toward group practice,

produces more bird-dogging of doctors through peer review, fee guidelines or controls, and

channels more money into the nation's health-care system.

While patients are going to be demanding more from you in terms of number of services, they are



also going to expect you to adhere to higher standards. There is ample indication that patients will sue for malpractice these days at the drop of a sponge. And they expect you to maintain a modern office, preferably with off-street parking, certainly with comfortable furnishings, and positively with well equipped rooms for examination and treatment, and an efficient, never-make-a-mistake business office. Complicated? If you have designed a new office or installed a computerized bookkeeping system, or if you have been so unfortunate as to be sued for malpractice, then you know how complex your life has already become as a result of patients' expectations. And no let-up is in sight.

You are going to feel the pressure from patients, as well as government, in other ways, too.

I mentioned earlier how well patients seem to tolerate doctors' fees. And yet I do not have to tell you that doctors' fees are one of the hottest subjects around these days. They have been rising pretty consistently at a rate of about 7 per cent a year—somewhat more than the general cost of living. We recently ran a little article in *Medical Economics* called "The Story Behind a 'Scandalous Fee' Headline." Maybe you remember it. It recounted the story of a 3-year-old child who stuck a piece of popcorn in her ear. When her middle-income father wound up with bills totaling \$420 for removal of that single piece of popcorn, he told it all to a Los Angeles newspaper, and the whole fee issue was aired in the public press.

This is just one incident, but it is not all that unusual. There does seem to be a revolt brewing against medical costs just as there is one brewing against higher state and local taxes and shoddy merchandise. And doctors are very vulnerable. They are already the highest paid occupational group in the country. They enjoy not only very high incomes, but also the respect and trust of their patients.

A revolt is not yet overthrowing the medical establishment. But it is going to remain a constant threat. That is especially true as some form of national health insurance remains a probability.

For a glimpse of the mood in Washington, I should like to cite some dialogue that occurred on the floor of the Senate just 17 months ago during a debate on this question: Should professional men who incorporate be permitted the same right to tax sheltered retirement plans and other corporate fringe benefits as nonprofessional corporate employees? Said Senator Abraham Ribicoff: "I would say that basically the medical profession is the highest paid profession in the country at the present time. The plumber does not earn \$100,000 a year or \$150,000 a year."

And Senator Albert Gore: "I think it would be interesting to see how many Senators who voted

against increasing the exemption for a dependent child from \$600 to \$800 will now vote to give tax deductions for retirement plans that are without limit." He was referring, of course, to tax deductions "without limit" for doctors, and he was bitterly opposed to the idea.

Senator Russell Long remarked: "These corporations are formed (by doctors) for no other purpose than tax avoidance. There is no effective limit on how much money they can shelter from taxation."

And Senator Ribicoff again: "I assure (you) that this doctor who is making \$176,000 a year is not concerned with the slums of the poor or the people who really need decent health care."

So the doctor has become a whipping boy. His fees and his income are matters of public record and public debate, much of it very poorly informed.

Dependence on others in your everyday life is another way in which complexity is overtaking you. Very few of you, I am sure, fill out your own tax return. Fewer still will do it in the years ahead. That is just one small example of your greater dependence on others—an accountant in this instance. And if you need him to help with your tax return, you certainly need him to go over your books at your office. If you make a major change in your practice—say, incorporating—you need a lawyer. And if you revise your will, chances are you need a different lawyer.

In your practice you will find yourself relying more on others. Referrals are apt to become more important as the trend toward specialization continues. Thus you will rely more and more on colleagues as well as patients for your livelihood. When you want to get away for postgraduate education, which is becoming increasingly important, you need to arrange coverage first, not only for the welfare of your patients but also for your protection against a malpractice claim.

As more and more patients clamor for more and more of your time, you will find that you need more paramedical personnel with all that it entails—hiring, training, delegating, selling the concept to patients. Once again, you will have more problems to contend with. You only hope that the advantages outweigh the drawbacks.

In many areas, doctors are gaining new responsibility for hospital affairs—with more M.D.s on hospital governing boards. So doctors have more responsibilities for financial affairs of hospitals at the same time that trustees are being held increasingly accountable for medical judgments of their staffs. There is also, of course, the well known trend toward hospital based practice.

If most of what I have said so far has been rather depressing—this litany of pressures coming at you from all sides—take heart. The next important

trend, and the last, that I shall touch upon this morning, may offer some comfort.

Doctors today are riding the crest of an unprecedented wave of prosperity. Net income from practice of the typical M.D. in 1969—after professional expenses and before income tax—was over \$40,000. That represented an increase of almost 8 per cent over 1968. And net income rose about 8 per cent in the two years before that as well. If it climbed another 8 per cent last year, and it probably did, and if it climbs that much again this year, and it probably will, that means typical net income for a physician this year will be about \$47,000. Next year the median will almost certainly hover around the \$50,000 mark, give or take \$1,000. A majority of doctors will be netting from practice between \$35,000 and \$65,000. I should add parenthetically that actual figures vary widely by field of practice, type of practice, location, and many other factors. The figures I have mentioned merely dramatize the widespread prosperity in the profession.

On this kind of income, it does not take much financial skill or sacrifice to set aside \$5,000 or \$10,000 a year. (On the other hand, it does not take much imagination to spend every last dollar and then some.) In any case, if normal savings are invested with any success at all, the resulting nest egg should keep the wolf permanently away from the door. If the stock market will just keep going up, we will all be in good shape.

There is a related trend at work that's going to make it even easier to attain real financial independence. This is the trend toward incorporation, and it is one of the principal economic forces in private practice right now. As of Spring 1971, according to early returns from a new *Medical Economics* survey, 17 per cent of M.D.s in private practice are already incorporated. That is almost one out of five in the whole country. To determine where we are headed next, we asked an additional question of those not already incorporated, "Do you intend to incorporate within the next 12 months?" Our analysis of the situation right now is that we expect about one-third of physicians to be incorporated by May of 1972. It is likely that within three years—if not sooner—fully half the doctors in private practice will be incorporated. Not only will they have large incomes, making saving relatively easy, they will also have tax-sheltered retirement plans under which savings will accumulate at a rapid rate. Many of those who do not have corporate plans do have Keogh plans, and odds are that Keogh is going to be liberalized. There is some fear that corporate plans will be severely restricted by new legislation, but my private guess is that they will continue to offer a most attractive way to get ahead financially. Even if corporate retirement plans are restricted,

there are many other benefits of incorporating—various insurance plans, for example—that will make professional corporations increasingly popular.

Professional corporations, I might add, are apt to spur the trend toward combined practice, despite the legitimacy of the solo corporation. And this is consistent with the over-all trend: greater financial independence but less freedom in practice. The doctor in combined practice has colleagues whose views must be taken into account. And in this sort of practice it is possible—and often desirable—to turn certain aspects over to a colleague or a business manager, once again underscoring your new dependence on others.

Even those remaining in unincorporated, solo practice are, from a practical standpoint, often in a form of group practice. Though they may be economically independent, they have frequent consultations and referral arrangements with colleagues who, chances are, have offices in the same building and privileges at the same hospital.

Somewhat paradoxically, and inevitably, with the added financial security comes still more complexity. There is the problem of choosing among alternate investments. If you decide to go into securities, should you go into mutual funds, or manage your own portfolio of stocks, or turn management over to an investment counselor? If you go into real estate, should you opt for raw land or a depreciable tax shelter? If your choice is cattle or oil or timber, the options multiply again and again. And if you have a portfolio of stocks and mutual funds, part of it in a tax-sheltered retirement plan and part outside, and if you own your office building as well as your home and perhaps an apartment house or a farm, and maintain several bank accounts, and borrow on your insurance cash value to set up a short-term trust to support your aging parents or to pay college costs, . . . well, you are getting a taste of all this now and as you continue to prosper you will become more deeply enmeshed in managing your own prosperity. You are not apt to complain too much about this aspect of your life in the 1970's, but it is all part of the pattern.

So what is the net effect of these and other super-trends? Can you be your own man in the 1970's? It is clear that you are going to find more demands of all kinds placed upon you. On balance, it will not be easy—but it should be possible—to retain an important measure of independence. But you are going to get it from all sides—from patients, government, insurance carriers, hospitals, your own employees—yes, even from other doctors. Those of you who cope successfully with these new demands, I feel confident, can look forward to greater rewards than at

(Continued on page 38)



# Abortion, the Patient, the Physician and the Law

## *The First Year's Experience*

EVALYN S. GENDEL, M.D., *Topeka*\*

ABORTION HAS BEEN legal in all states in the United States "to save the life of the mother" since the early laws were enacted between 1828 and 1868. Six states over the years have added "to save the life or preserve the health" of the mother. But in 1967, when the first modified abortion law was passed in Colorado, all 50 states were operating under the previous legal definitions. Kansas had attempted a similar modified law in 1964, which passed the Senate but was defeated in the House. In 1969 Kansas altered its 101-year-old 1868 law, following a pattern which was similar to the Colorado legislation, based on the Pittsburgh Law Institute Model Penal Code. In the intervening years, 1967-1971, over 15 states have modified the laws for termination of pregnancy, and approximately 26 additional states have had new legislation "pending" in the last year. While these legalistic maneuverings have been taking place, many thousands of women throughout the country have resorted to criminal abortions, rather than undergo a mandatory pregnancy. The society at large has apparently acquiesced to this practice and has served as an accomplice in these criminal acts by ignoring an expressed medical need and allowing the denial of diagnosis and known treatment to a segment of the population.

This strong statement is made for several reasons:

1. Criminal abortion is discriminatory against middle and low income women, since wealthier women need only afford the air fare to Japan, Sweden, Puerto Rico, etc., to receive a safe, legal abortion for a low fee. Today they may also add selecting a more distant state, with modified laws. Less fortunate women may still pay a high fee but the service they receive is less than safe.

2. Criminal abortion is demeaning to the woman who must choose this pathway, exposing herself to self-incrimination, should she be prosecuted, and subjecting herself to the deceit and disguise associated with seeking illegal procedures. Few criminal abortions are ever brought to trial because families perpetuate this secrecy, even when death or disability occur to a close female relative.

3. Most important has been the danger associated with criminal abortion, where complications, occurring from lack of medical knowledge by the abortionist have caused death or disability to the patient. Even more telling have been the criminal procedures performed on the "patient in panic" with no attempt to determine whether or not she was pregnant in the first place.

Kansas citizens, through the legislature, and Kansas physicians recognized the implications for the health of women in avoiding this issue, with the passage of the Kansas law. In the one year of its implementation, 3,244 Kansas residents received a therapeutic abortion, with well over 90 per cent being performed by vacuum aspiration or dilatation and curettage. Through statistics from other states monitored by the Communicable Disease Center of the Public Health Service, it is estimated that another 1,400 Kansas women travelled out of state to obtain abortion. This total number of Kansas residents represents a little less than the approximate number estimated to have sought criminal abortions in past years. Their diagnoses have primarily been related to emotional disturbance, and much of this has been related to physical impairment resulting from pregnancy. Some women are still utilizing the criminal avenue since previous estimates determined from complications of these activities seen in hospital emergency rooms has lessened considerably, but still exist in greatly decreased numbers. Close to 5,500 underground abortions were approximated for Kansas from this major measurable factor. For reasons related to lack of funds, ignorance of state laws, including Kansas', or not meeting requirements of the law, the practice continues. Kansas birth rate increased by 1,000 during this abortion implementation year, with a 5.9 per cent increase in unwed pregnancies. These figures validate previous predictions that the number of women receiving abortions under the modified law would not exceed the number who had been terminating early pregnancy in the previous hazardous criminal environment. The fact that this avenue is still used at all is testimony to the evidence that better educational methods for the public must be instituted so that all women will know about and

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\* Director, Maternal and Child Health Division, Kansas State Board of Health.



have access to the physician who can provide for her an accurate diagnosis of pregnancy, an opportunity for counseling, and a thorough physical evaluation where medical judgment can be exercised for the benefit of the patient.

Abortion is a voluntary procedure permitting the patient to see the doctor of her choice and permitting the physician and the hospital to give high quality medical care to the individual whose condition requires treatment. The ethical obligation of medicine is to the patient, if it is in the physician's purview to render the care she needs relative to the findings made on analysis of her presented problem. If the physician is unable to provide this care because of his own subjective personal feelings, the obligation remains to make an appropriate referral. To date, all hospitals capable of rendering service have not done so, while many physicians make referrals from small communities where the techniques of dilatation and curettage may not be widely practiced, and where the patient prefers the anonymity of a larger center. There have been no maternal deaths from abortion, and the total number of maternal deaths from any cause (five) was the lowest in the history of the state during the same year as the implementation of the abortion law.

The interrelationship of all of the factors related in this paper underscores the positive aspects of the change in the Kansas law and the increasing number of states attempting to make similar changes. The choices open to women to protect their own physical and mental health are widened. Contraceptive service is more readily available and acceptable to all men and women. This means that patients have a chance to establish their own pattern of fertility, compatible with their own social, religious and personal beliefs. The broader use of contraception provides women who already have other children an opportunity to exercise her skills at parenting and to protect her own health against repeated pregnancy without adequate spacing. It also permits limitation of family size if this is desired. Another choice, when pregnancy occurs due to ignorance of contraception, rape, incest, contraceptive failure with resultant health or mental health impairment is abortion. In Japan, and in other countries where actual survival of the population rested on reduction in total numbers, at a time when contraception was unavailable and relatively unknown, legal, safe abortion became the major method of birth control. It is still the major method, though forbidden and underground in most countries where use of contraception is still under religious prohibition and illegal and unavailable. In some of these countries (Italy, many parts of South America) there is one

abortion for every birth, with resultant high maternal death rate and the complications attached to the criminal method.

Kansas has shown a responsibility in medical care in the revision of the abortion law. The limitations inherent in these revisions can eventually be improved as more hospitals provide the service, lessening the waiting period, and insuring a chance for early treatment and the least complicated procedures for the patient. More states are beginning to recognize the patient/physician ultimate reciprocal obligation. A final removal of abortion from the legal arena, where it has been the only medical procedure regulated by statute, will insure that women receive access to appropriate treatment indicated by their condition. The patients about whom these comments are written are female, and although there are colleagues who will disagree, these patients' medical fate has long been decided by never-pregnant males. This is not a matter of deliberate discrimination, but fact. The move by women's groups to make abortion laws unconstitutional on the basis of invasion of privacy; in the interference in medical judgment imposed on a particular female condition; on the "rights of women" over their own reproductive physiology, are having a public impact. The decision in the Washington, D. C. Supreme Court to place the burden of proof on the state to show that an abortion is not good medical practice, and several cases now pending before the Supreme Court of the United States, indicate a growing, if slow, recognition of the disparity in medical service and practice directed at women. No male condition currently known is limited by such restrictions. Medical judgment and patient need have traditionally been the basis of the practice of medicine. Consideration of all the factors which will permit this fact to be universally true will eventually lead to abortion assuming its reasonable place in a normal part of medical practice.

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# KUMC Trauma Conference

## *Abdominal Trauma With Hematuria*

Edited by F. W. RECKLING, M.D. and

ARLO S. HERMRECK, M.D., *Kansas City, Kansas*

**Dr. Damico (Urology Resident):** The case for presentation is a 21-year-old male involved in a motorcycle accident. While riding his motorcycle down a street, he apparently struck an object and was thrown from the bike. He was taken to the Emergency Room of a local hospital where he was noted to have multiple bruises and fractures of the left humerus and radius. His vital signs were stable at that time, and his fractures were treated with an upper extremity hanging cast. He was discharged and sent home on pain medication.

The next morning the patient developed left upper abdominal tenderness and flank pain, particularly with activity. He presented to another local hospital and was admitted for evaluation and observation. Examination at that time revealed a patient who had left upper abdominal guarding and tenderness, along with exquisite left flank pain. There was no palpable flank mass at this time. His hematocrit was 40 per cent, and his urinalysis revealed microscopic hematuria (4 to 6 RBC's/per hpf). An intravenous pyelogram was obtained which revealed nonvisualization of the left kidney. The patient was transferred to the University of Kansas Medical Center for further evaluation.

Examination at this institution revealed a very well developed young man in no acute distress. His vital signs were quite normal. He had an obvious fracture of his left humerus with a hanging plaster cast in place. His chest was clear to auscultation, and his heart rate was 80 beats per minute. Examination of his abdomen revealed tenderness of the left upper quadrant and left flank region with moderate guarding. There was no palpable mass noted in the left upper abdomen or left flank. Bowel sounds were decreased, but they were definitely present. Urinalysis again revealed microscopic hematuria with 6-8 RBC's/hpf and no white blood cells. A repeat hematocrit was 42 per cent. The patient had no past history of urological disease or hematuria. The previously taken intravenous pyelogram forwarded with the patient revealed absence of the psoas shadow on the left side.

On the three-minute film there was good renal function on the right side with what appeared to be normal size kidney and collecting system; however, none of the contrast media could be visualized in the left kidney. A delayed film was obtained five hours after administration of the contrast media which revealed total lack of visualization of the left kidney.

The patient was placed at bedrest for 48 hours for observation. He was entirely stable during this period, and the abdominal tenderness appeared to be less severe. Seventy-two hours following admission the patient was taken to the operating room where a left retrograde pyelogram (*Figure 1*) was done.



*Figure 1.* Retrograde pyelogram of the left kidney. The left collecting system is entirely normal with no extravasation of dye. Also note normal size and shape of the left kidney.

As you can see on this x-ray, there is an entirely normal left collecting system with no evidence of extravasation of dye. In addition, this kidney appears to be entirely normal in size and shape. The

Trauma Conference, September 27, 1971, at the University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City, Kansas 66103.



following day, or ninety-six hours following admission, the patient was taken to the x-ray department where a bilateral renal arteriogram was carried out (Figure 2). The arteriogram revealed a normal right renal artery with good concentration of the dye by the nephrons on the right side. However, on the left side there was almost total occlusion of the left renal artery suggestive of an intimal tear of this vessel. Although some dye was seen to pass into the left kidney,

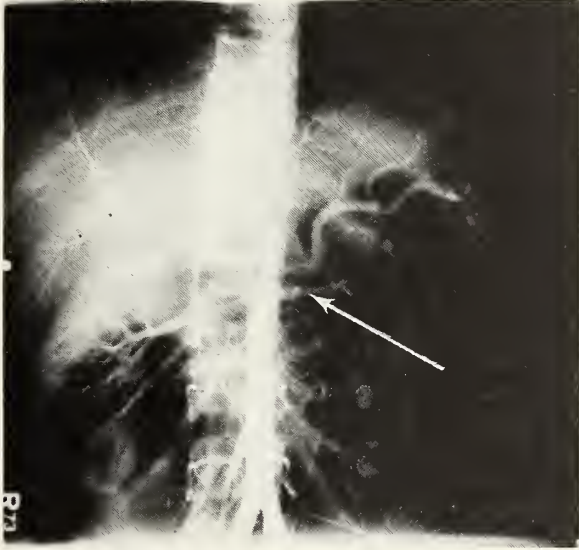


Figure 2. Bilateral renal arteriogram. The right renal artery is normal with good visualization in the nephro-gram phase. The left renal artery is almost totally occluded by an intravascular lesion. Absence of function of the left kidney is demonstrated by lack of concentration of contrast media in the collecting system.

there was total absence of function as demonstrated by lack of concentration of contrast media in the collecting system of the left kidney. In addition to the above studies, a radioactive hippuran scan was carried out. Again, this study revealed total absence of concentration in the left kidney with a normally functioning right kidney (Figure 3). It should also be noted from the arteriograms that the splenic artery was intact, and that there was no extravasation of dye in or about the spleen.

**Dr. Reckling:** What was your diagnosis at this time?

**Dr. Damico:** Traumatic occlusion of the left renal artery secondary to intimal tear with necrosis of the left kidney.

**Dr. Reckling:** What was done for this patient?

**Dr. Damico:** The patient underwent an elective transabdominal exploration of his left kidney. At the time of surgery, the patient had a large hematoma about the left kidney. The left kidney was without perfusion and necrotic. This kidney was removed, and examination of the removed specimen indeed

revealed an intimal tear in the distal renal artery with thrombosis of the distal renal arteries. There were no other abnormal findings within the abdominal cavity.

**Dr. Hermreck:** How has this patient done post-operatively?

**Dr. Damico:** The patient had a fever for two or three days following the operation, but cleared up with coughing, deep breathing and antibiotics. Since then his postoperative course has been entirely unremarkable.

**Dr. Reckling:** Dr. Damico, do you get concerned if you find 4 to 6 RBC's in a urinalysis with a history of trauma?

**Dr. Damico:** Yes, hematuria is always abnormal, whether it be microscopic or gross.

**Dr. Reckling:** How often do you have trauma to the urogenital system without hematuria?

**Dr. Damico:** I doubt if this is known. However, it is known that approximately 3 to 5 per cent of patients with rather severe renal or collecting duct trauma will not show immediate hematuria. However, if one carries out serial urinalysis, one will usually be able to demonstrate delayed hematuria.

**Dr. Foret:** I would like to make a few comments about microscopic hematuria. You know, there are several reasons for hematuria, but in a traumatized patient you must be aware that this is usually due to some mechanical injury. In addition, the degree of hematuria does not always correlate with the extent

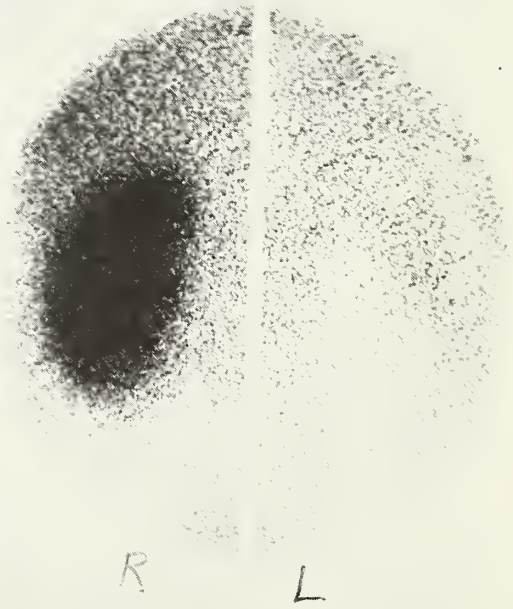


Figure 3. Total absence of function of the left kidney as demonstrated by radioactive hippuran scan.

of injury. One can have significant injuries to the kidney, ureter, bladder, prostate gland or urethra, and only have 4 to 8 RBC's/hpf, as was the situation in this case. Likewise, one frequently sees rather gross hematuria without significant urogenital injury.

**Dr. Reckling:** How often do you see hematuria following catheterization?

**Dr. Damico:** This is not uncommon following placement of a catheter, particularly if the patient has a urethral stricture or prostatitis. However, in a relatively normal male with no disease in his urethra, this is quite uncommon.

**Dr. Reckling:** Dr. Foret, would you like to make some additional comments about these x-rays?

**Dr. Foret:** In addition to the comments already made by Dr. Damico, I think it is important to point out that the size of the remaining functioning kidney is important. For example, this patient could have had a nonfunctioning left kidney or a hypoplastic kidney, and if this was the case, one would expect compensatory hypertrophy of the remaining kidney. As you can see from the x-rays presented in this patient, the right kidney was not enlarged and appeared to be normal in size. The retrograde pyelogram of the nonfunctioning left kidney likewise reveals a normal collecting system, suggesting that this kidney was of normal size prior to injury.

**Dr. Hermreck:** Dr. Foret, could you outline how you should proceed with the workup on a patient with hematuria?

**Dr. Foret:** Initially, providing the patient's condition is stable enough to permit these studies, anyone with microscopic or gross hematuria should have a cystourethrogram. This will identify in most instances whether or not a major injury has occurred to the urethra or bladder, and whether or not extravasation has taken place. This is particularly important in a patient with a pelvic fracture where traumatic rupture of the urethra and bladder might occur.

Following these studies, an intravenous pyelogram should be carried out. If it is entirely within normal limits bilaterally, and one only has microscopic hematuria, you can assume that a minor injury has occurred, and most likely surgical intervention will not be required. However, if one of the kidneys fails to visualize on the intravenous pyelogram, one should then go to more definitive studies. At one time, we used to then proceed with retrograde pyelograms of the nonvisualized kidney. Many of these patients had fractured pelvis and femurs, and they had to be placed in the lithotomy position for examination. Seldom did any meaningful information come out of these studies, nor did we learn anything about the functional status of the kidney. This case beautifully depicts a normal retrograde without any evidence of extravasation of the injected contrast media, yet this kidney, for all practical purposes, was dead.

With the development of arteriography we usually go directly to renal arteriograms. An arteriogram usually gives us the definitive information about the integrity of the vascular system of the kidney and whether or not there is functional integrity of the nephrons. If there is extravasation of contrast media on the arteriogram, or damage to the renal vasculature as we have seen in this case, surgery is often indicated.

**Dr. Hermreck:** Dr. Foret, suppose you see extravasation of dye on the renal arteriogram, what do you do?

**Dr. Foret:** This involves some clinical judgement. Certainly if one is entering the abdomen anyway for treatment of other injuries related to the trauma, careful inspection of the kidney should be carried out. If, however, the patient's condition does not otherwise warrant immediate exploration, one can frequently watch these patients for 72-96 hours to see if they can resolve the injury spontaneously.

The real value of renal arteriograms is the early demonstration of lesions which will not resolve spontaneously and, therefore, one will proceed with surgery at an earlier date. Previously, we would often procrastinate or allow the patient to deteriorate prior to intervening with definitive therapy.

**Dr. Reckling:** Dr. Foret, I have heard the term "whiplash injury of the kidney." Is this a distinct entity?

**Dr. Foret:** No, but it is a reasonable one to use. The main vessels of the kidney are fairly firmly fixed, as you know. The kidney, however, lies in a cushion of fat within Gerota's fascia, and is somewhat more mobile. Rapid deceleration can result in intimal fractures of the vessels and total disruption of the main vessels at the point where they are fixed.

**Dr. Thal:** Dr. Foret, is it possible that we are actually dealing with a shearing injury between the spinal column and the kidney, with resultant vascular injury?

**Dr. Foret:** This is certainly possible; however, if this were true, one would often expect the entire artery and vein to be avulsed. In most situations, one observes intimal tearing of the vessels or only partial avulsion. The renal vein is rarely torn.

**Dr. Reckling:** Dr. Foret, what kind of an approach should one use to explore the kidney under these circumstances?

**Dr. Foret:** When dealing with a patient with blunt abdominal trauma, you should always think of associated intra-abdominal injuries. An anterior approach through a long midline incision is what we used in this patient, and it is the preferred incision. This allows one to get early control of the vascular pedicle, and secondly, as mentioned, it would allow one the opportunity of handling other problems that one might encounter in the abdomen.



**Dr. Reckling:** Dr. Foret, how do you approach the renal vessels?

**Dr. Foret:** Probably the best way to get control of the renal vasculature is by incising the posterior peritoneum over the aorta and adjacent to the first portion of the jejunum. One immediately encounters the aorta, and by further dissection, the left renal vein is readily visualized. The left renal vein has to be mobilized and retracted superiorly so that one can get access to the left renal arteries. In order to adequately mobilize the left renal vein, however, one has to divide the ovarian or spermatic vein as it joins the renal vein. These vessels can then be dealt with quite easily. If, for example, the left kidney has to be removed, one merely mobilizes the splenic flexure of the left colon taking care to avoid injury to the spleen and pancreas, and the kidney can be removed. To remove the right kidney one merely has to mobilize the hepatic flexure of the right colon and Kocherize the duodenum to get exposure.

**Dr. Friesen:** What are the chances for a vascular repair and preservation of renal function in a kidney injured such as this?

**Dr. Foret:** Russell Scott's group in Baylor is probably the national authority on this. With the diagnostic aid of early arteriograms they have been able to intervene promptly in several of these traumatic cases where vascular injury has occurred to the kidney. They use the anterior approach and rapidly get control of the renal vessels. If there is a remedial arterial injury, they proceed immediately with an end-to-end anastomosis, or interpose a segment of saphenous vein to re-establish blood flow to the kidney. Apparently they have been able to salvage a number of these kidneys.

**Dr. Hermreck:** I think the importance of attempting immediate revascularization of the kidney in acute traumatic situations is an important one. Let's suppose this patient entered the emergency room with this seemingly trivial injury, but because of a congenital malformation, this patient had a hypoplastic right kidney or absence of the right kidney. Surgical intervention and reconstruction of the injured artery could prevent a catastrophic situation. If one can make the diagnosis of renal vascular injury under these circumstances within two hours, one should proceed immediately and make every attempt to revascularize this kidney.

**Dr. Damico:** How long can one have total ischemia to the kidney and have a salvageable organ?

**Dr. Hermreck:** This has been well worked out in laboratory models. One can totally occlude the renal vascular pedicle for 30 to 45 minutes with immediate resumption of renal function; however, when one has total renal ischemia for periods of one to two hours, this will lead to acute renal failure in about 50 to 75 per cent of the cases. This does not imply,

however, that the kidney is permanently injured. As we know from transplant work, where one has a prolonged warm, ischemic period, the kidney may not function for approximately three to four weeks, but with dialysis support, one can expect recovery of this type of acute renal failure in a majority of these patients. Amazingly, in this institution, most cadaveric organs thus far implanted into donors have failed to function adequately in the immediate post-operative period. However, with dialysis support, the bulk of these patients have gotten resumption of good renal function.

**Dr. Reckling:** Dr. Foret, would you outline some of the complications that arise if a renal injury such as this is not dealt with promptly?

**Dr. Foret:** There are a lot of potential complications that one can arbitrarily separate into those manifesting themselves early and late. The early ones, of course, are continued bleeding with hypotension and shock. Another is infection of the hematoma with a resultant perinephric abscess. Late complications, such as extravasation of urine with the formation of a pseudocyst of the kidney, do occur just as they do in the pancreas and, in addition, it is well known now that hypertension can result from renal injuries.

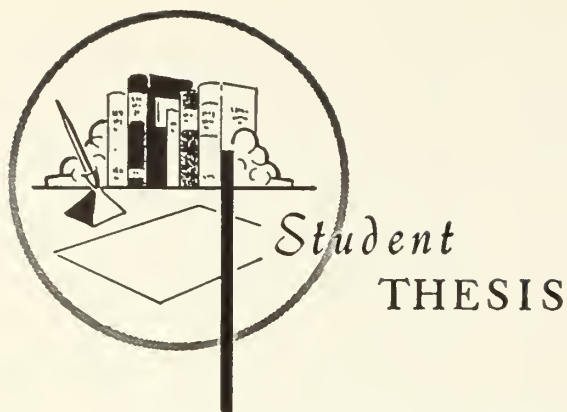
**Dr. Reckling:** What is the mechanism for the delayed development of hypertension?

**Dr. Foret:** Well, first of all, if one has an intimal tear and partial occlusion of the renal artery, you can get what is known as a Goldblatt kidney. In addition, chronic inflammation in and about the kidney such as might result following urinary extravasation can result in a constrictive perinephritis and result in hypertension. As you know, Dr. Page some 30 years ago demonstrated that wrapping the kidney in cellophane produced an intense perinephric inflammatory response with resulting renal ischemia and hypertension.

**Dr. Thal:** What about segmental resection of the kidney? What are its limits?

**Dr. Foret:** One can occasionally carry out a segmental resection of the kidney but, unfortunately, in traumatic injuries the opportunity for this is frequently limited. As you know, the kidney is actually divided into segmental regions just as the lung and liver. These arteries supplying the segments of the kidney are end arteries, and occlusion of these vessels results in permanent ischemia to the areas perfused by these segmental branches. If one is fortunate enough to have a nicely delineated fracture of the upper or lower pole of the kidney, it is often possible to do a segmental resection. Not infrequently, however, even though one does a segmental resection for traumatic injury to the kidney, you end up doing a two-stage nephrectomy due to continued hemorrhage or infection in the kidney.

*(Continued on page 41)*



## *The Physiology and Toxicology of Lithium*

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### Introduction

LITHIUM SALTS are effective therapy for acute manic episodes and prescribed prophylactically, may prevent recurrent psychotic depressive or manic attacks. Lithium's effectiveness was first observed in 1949 by an Australian, John Cade, and the serendipitous discovery deserves comment. Cade came upon the idea of using lithium in the treatment of manic depressive psychosis during an experiment in which he was testing the toxicity of urea on guinea pigs. He injected the lithium salt of uric acid and found that the guinea pigs were able to withstand previously toxic doses of urea. It provided protection from the convulsive mode of death caused by the urea. He also found that lithium carbonate injected interperitoneally caused a sedative effect. "It seemed worthwhile in view of these results to try lithium salts in the treatment of two distinct disorders—first mania in view of the sedative effect, secondly epilepsy, in view of the anticonvulsant effect."<sup>1</sup> Its action in acute mania has been confirmed in controlled studies by Schou, Gershon, and Maggs. Lithium appears to be specific in that it removes the hyperactivity and elation without causing lethargy and without interfering with normal physiologic processes. It is also quite effective in hypomanic states. Of even greater interest is lithium's ability as a prophylactic agent against recurrent psychotic depression, although it has no therapeutic benefits during the depressive attacks. Its use in convulsive seizures has not proven to be of great value and has largely been

replaced by more efficacious drugs. In the late 1940's lithium was used as an effective substitute for sodium in the management of cardiac decompensation. Occasionally toxic symptoms were noted and it was removed from the therapeutic regimen. Since Cade's discovery of lithium, it has been used widely in Europe and Australia but despite its attested effectiveness it has been used very little in the United States until the last few years. With the onset of the increased use of lithium in the affective disorders, it has become increasingly important that toxic manifestations are recognized and treated. It is the purpose of this paper to explore what is known about lithium and its toxicity, and effective means of elimination, and report one such case of lithium intoxication.

### Physiologic Effects and Mechanism of Action

Lithium is the first in the series of the alkali earth metals. It is monovalent, a strong reducing agent and is present in solution entirely in the ionized form. In an aqueous solution it has a greater shell of hydration than does sodium. Lithium is well absorbed by the gastrointestinal tract and is well distributed if administered parenterally. Ingested lithium is excreted in the feces, sputum, saliva, sweat, and sperm, but predominantly in the urine. Trautner and Morris<sup>8</sup> found that after a single dose of lithium, 90 to 95 per cent of it was excreted in the urine. Autopsy specimen of patients who were being treated with lithium showed a wide distribution of that element. The following tissue concentrations were noted and expressed as mEq/kg wet weight: muscle—2.0; bone—4.1; liver—1.0; aorta—1.7; kidney cortex—1.8; lung—1.6; myocardium—2.1; pancreas—1.6; brain—1.4.

Butcher<sup>16</sup> found that lithium is distributed

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication from a group judged to be the best by the faculty at the school. Dr. Shrader recently completed his internship at Maricopa County General Hospital, Phoenix, Arizona.



throughout the total body water including the intracellular water, while sodium is distributed mainly in the extracellular compartment. He was attempting to elucidate the mechanism of action of plasma volume expansion caused by sodium and to see if lithium would be an adequate substitute. He found that lithium could not substitute for sodium insofar as supporting the extracellular fluid volume despite the fact that the relative hydration of lithium was greater. He found a significant reduction in the plasma volume following the intravenous loading of solutions containing the cations of lithium. This was all accounted for by the amount of water entering the cells with the lithium, assuming the normal relationship between the extracellular and plasma volume is maintained during and after loading with lithium. Butcher proposed a further explanation for the reduction of plasma volume: in lithium solutions four-ninths of the lithium is distributed intracellularly, meaning that each mEq of lithium takes 11 to 12 ml of water into the cell with it.

Baer<sup>3</sup> found a significant increase in the 24-hour sodium space in the 11 patients with affective disorders that he studied and found a trend for the extracellular fluid volume to increase and the residual sodium to decrease. He also noted that patients who exhibited a greater increase in their 24-hour exchangeable sodium had a more pronounced clinical response to lithium than did those with a less dramatic increase. In contradiction to Butcher, Shaw and Coppen<sup>22</sup> found an increase in total body water and intracellular water following lithium administration of one week's duration and a trend toward an increase in extracellular water. They also showed contradictory evidence to Baer's work in that they found no change in the 24-hour exchangeable sodium. The differences in these results are reflected in the various experimental methods and generally reveal the relative inaccuracy in all methods used.

Trautner and Morris<sup>8</sup> studied the urinary excretion pattern of lithium. They found an initial peak of excretion of lithium six to eight hours following administration of moderate doses during which one-third to two-thirds of the ingested dose was excreted. There was a very slow excretion of the remaining, the ion still being detectable after two weeks. The peak lithium excretion was found to occur at the same time as the peak sodium and potassium excretion and at the same time as the peak urinary flow. After a short diuretic phase following the ingestion they found an excessive urinary excretion of sodium, the amount equivalent to five to six times the amount of lithium ingested. When the dosage of lithium was increased or given daily for variable lengths of time they noted the daily excretion rose sharply for the first five to six days and then an equilibrium was reached. They concluded from their

work that there appeared to be two separate effects of lithium: (1) A specific effect on sodium balance with moderate doses is well tolerated but with high doses may lead to serious sodium depletion; (2) Lithium may have a general effect on a potassium sensitive functional metabolism of the cell which may lead to a breakdown of cellular metabolism. Murphey and Goodwin<sup>14</sup> found that administration of lithium had a triphasic sequence of urinary sodium changes which seemed to be partly mediated by the effects of aldosterone. They found increased aldosterone secretion during the first four to five days following treatment with lithium which could explain the early sodium retention observed by Baer. They also found a 30 per cent increase in plasma cortisol secretion which would be enough to cause the aldosterone-like effects.

Lithium is not bound to plasma proteins and was found by Talso to move freely across a semi-permeable membrane. From this information we can conclude that lithium is filtered freely through the glomerular membrane. Schou, Steinness and Hanson<sup>15</sup> found that the fractional reabsorption of lithium was 0.80, which was the same as the fraction of filtered sodium that is reabsorbed in the proximal tubule. They felt this indicated that lithium reabsorption took place in the proximal tubule possibly by the same mechanism responsible for the reabsorption of sodium. This view was further supported by the fact that lithium reabsorption was unaffected by thiazide diuretics, ethacrynic acid and spironolactones in doses sufficient to produce a two- to threefold increase in sodium excretion. These diuretics are known to inhibit sodium reabsorption in Henle's Loop and the spironolactones inhibit sodium reabsorption in the distal convoluted tubule. The fractional reabsorption falls following the infusion of saline supposedly due to the natriuretic hormone, and the fractional reabsorption of sodium is enhanced by lower dietary intake and inhibited by higher intake. They found that the fractional reabsorption of lithium under the varying influences of sodium intake changed in the same direction as the proximal sodium reabsorption. Subjects on a normal diet, 200 milligrams sodium per day, had 80 per cent of the filtered lithium reabsorbed; on 600 mEq sodium per day, 75 per cent of the filtered lithium was reabsorbed. On a salt free diet, less than 2 mEq of sodium per day, 90 per cent of the filtered lithium was reabsorbed. Schou<sup>17</sup> used the endogenous creatinine clearance as identical to the glomerular filtration rate in kangaroo rats and found that the urinary excretion of lithium varied with the experimental conditions. The range was 0.3 to 0.88 microequivalents per minute per 100 grams of body weight. The lithium excretion increased as the serum lithium increased. The relationship between the excretion frac-

tion and the serum concentration is inverse; the highest excretion fractions are observed in rats with the lowest serum concentration. The excretion fraction of lithium (ratio of the clearance of lithium to the clearance of creatinine [ $C_{Li}/C_{Cr}$ ]) varied from 0.02 to 0.77. Since all of the excretion fractions are less than one, part of the filtered lithium must be reabsorbed either actively or passively. He also found a close relationship between lithium and sodium in that on a high sodium intake the reabsorption of lithium decreased and on a low sodium diet the reabsorption of lithium increased. Schou felt that this relationship of lithium might be explained by an aldosterone effect but failed to show any response when exogenous adrenal extracts were administered. He postulated that lithium and sodium ions may compete for entrance into or transport through the kidney tubules and that lithium was not as efficient as sodium. He felt that this was a highly probable explanation by the previous demonstration that the fractional excretion of lithium varied directly with the sodium excretion and inversely with the lithium load.

Since lithium is monovalent and enters cells, Homer and Solomon postulated that perhaps it is handled by the kidney in the same way as potassium, but found that there was no evidence of tubular secretion of lithium. In a later paper Schou<sup>10</sup> presented evidence that lithium and sodium were not handled the same way throughout the nephron because the diuretics that affect increased excretion of sodium had no effect on lithium excretion. He also showed that increased hydrogen ion excretion, produced through the administration of ammonium chloride, was without effect on lithium excretion. Osmotic diuretics, especially urea, led to a specific rise in lithium excretion but no change in sodium excretion. This lends credence to the fact that lithium is not reabsorbed distally in the nephron or is absorbed with very low efficiency. Further evidence to support a proximal reabsorption of lithium is shown by the fact that interference with hydrogen and potassium ion excretion and so with linked sodium reabsorption in the distal convoluted tubule and collecting duct does not lead to alteration of lithium excretion. This is in agreement with the earlier work of Thomsen, Schou, Steiness and Hanson.

In summary, then, lithium is readily absorbed through the gastrointestinal tract and evenly distributed with intravenous administration. It is distributed throughout the total body water and is found intracellularly. Its effect on the expansion or reduction of plasma volume seems to be in some dispute but the best evidence points to a slight reduction in plasma volume due to the fact that lithium is present intracellularly and takes with it substantial amounts

of water. Also because lithium is present intracellularly, it displaces potassium ions and occasionally a transient rise in the serum potassium will be seen. It is primarily reabsorbed in the proximal tubule and fractional excretion of lithium is dependent on the sodium intake, serum concentration of lithium, and the amount of water reabsorption.

Lithium has also been observed to involve many other physiologic functions. Its action on the thyroid gland was observed and studied by Cooper and Simpson,<sup>20</sup> and Fieve and Platmann.<sup>21</sup> They found a marked reduction in the protein-bound iodine (PBI) which was an actual reduction in the level of circulating hormone and not a reduction in the mass of the binding protein or a reduction in its binding capacity. They also found in human subjects an inverted  $T_3$  resin uptake and a marked decrease in the 24-hour  $I^{131}$  uptake. Schou in 1968 observed an increased incidence of diffuse nontoxic goiter in patients being treated with lithium carbonate. Cooper and his associates concluded from their experiments that lithium did not interfere with iodine metabolism at the intrafollicular level, but its effect could be accomplished by a variety of mechanisms before the iodine was trapped by the gland. Some of the mechanisms considered were an effect on the hypothalamic-pituitary axis, by increasing the iodine space or by increasing the urinary clearance and membrane transport effects. The resultant low hormone levels would lead to an increased thyroid-stimulating hormone (TSH) production and an increase in thyroid clearance and, in those patients with low thyroid reserve, a goiter would ensue. Schou found that this was quite small in the risk group, representing approximately 4 per cent of their patients on lithium. Harris and Jenner<sup>13</sup> found that lithium reversibly inhibits the action of vasopressin on rat kidney. In previously sensitized rats, lithium constantly produced a 40 to 70 per cent inhibition in the anti-diuretic response to 50 units of intravenous Pitresin, and they observed no change in the response with the other alkali earth metals. Clausen found that lithium imitates the action of insulin, as far as the uptake of glucose by the rat hemidiaphragm. Lithium was not as effective in this regard, but exhibited a greater than insulin effect on glycogen deposition. He found that lithium would displace potassium from the tissue. King, *et al.*<sup>12</sup> studied the cerebral effects of lithium and found that lithium acts in a manner similar to potassium in that it stimulates lactate production and it replaces a small but significant amount of cerebral sodium. They found that cerebral magnesium was elevated in the presence of lithium. Herbst also noted that in coelenterate embryos in a lithium containing media formed excess endoderm at the expense of ectoderm. Mc-



Leod found that lithium depresses the activity and metabolism of human sperm. Pondou also noted a greater fragility of human red blood cells in lithium containing media and this was confirmed by other authors who noticed this phenomenon in their blood samples. Recently it has been shown that lithium may have the ability to block the pressor response of angiotensin.

The mechanism of action of lithium is essentially unknown but many theories have been proposed which attempt to correlate the available data. King, *et al.*<sup>12</sup> felt that their findings were consistent with the hypothesis that the effects of lithium are related to modifications of the activity of sodium-potassium adenosine triphosphate and lent further weight to the hypothesis that changes in cation concentrations in the brain are important in the etiology and treatment of mania. Others have postulated a nondescript disturbance of cellular function, especially the potassium sensitive functions of the cell, which may lead to a complete breakdown of cellular metabolism in the toxic state. Still others have theorized that lithium's effectiveness is related to the replacement of sodium in the brain and this alters the biochemical and electrical phenomena of the brain, resulting in the remission of the manic state. Cooper and Shaw propose that lithium salts may affect the physiologic mechanisms responsible for body fluid changes and this may be related to its therapeutic effect. They hypothesize that lithium may have an effect on a second system or multiple systems to explain the prophylactic effect. There is much evidence to support the hypothesis that a disturbance in amine metabolism occurs in the affective disorders. Many of the drugs found useful in this area produce profound alterations in the metabolism of monamines. This is the most popular theory of the etiology of the affective disorders. Lithium treatment appears to accelerate destruction of norepinephrine in the brain but the pattern of metabolic products suggests that the catecholamines are destroyed without being released. Lithium in low concentrations appears to inhibit electrical stimulation-induced release of norepinephrine and serotonin from brain slices. Lithium also inhibits the release of some putative amino acid transmitters from brain slices and inhibits release of transmitters at invertebrate cholinergic synapses. Nerve ending particles (synaptosomes) obtained from brains of animals treated with lithium take up norepinephrine more effectively, and platelets from patients treated with lithium carbonate concentrate serotonin more rapidly. These results suggest that lithium may limit the availability of central neurotransmitters at the synapse and is probably the most widely held theory at the present time.

## Toxicity

Lithium has been used in the past for the treatment of gout and as a salt substitute in patients on low salt diets. Several tragic deaths have occurred in the late 1940's due to its indiscriminate use in patients on low salt diets. The toxicology of lithium will become more important as the usage of the drug increases for the treatment of mania. Two main types of unwanted side effects of lithium can be distinguished. One is represented by side effects such as gastrointestinal irritation, tremor, thirst, and polyuria that may occur at low serum levels and which are inconvenient but not dangerous. The other is lithium intoxication associated with lithium levels above 2 mEq/L. Schou, Amidsen, and Jensen,<sup>5</sup> Levy,<sup>18</sup> and Horowitz and Fischer<sup>7</sup> have all reported cases of lithium intoxication or poisoning. Intoxication develops gradually. Prodromal symptoms can be observed for several days to a week and generally consist of sluggishness, drowsiness, dysarthria, mental confusion, vomiting and diarrhea. The clinical picture of fully developed lithium intoxication is dominated by central nervous system manifestations. They generally consist of protracted impairment of consciousness varying from only very slight lethargy to complete coma. There has been no paralysis of limbs observed. Muscle tone is increased with a coarse tremor and fasciculations or asymmetric clonic contractions of large muscle groups. Epileptoid seizures occurred in a small number of patients. Electroencephalograms of three patients revealed a decrease in alpha activity and an increase in theta and delta activity. Generally, there was a moderate increase in BUN and serum creatinine and clinically there were no signs of uremia. A few patients showed a relatively low urine output in spite of sufficient fluid intake but anuria did not occur. A few patients showed a transient proteinuria and there was a substantial increase in the number of urinary tract infections. Schou<sup>5</sup> reported that in four out of five patients there was no change in the EKG pattern, while others have reported significant changes, such as flattening or inversion of T-waves, atrial fibrillation and other arrhythmias in severely toxic patients. For a long period of time the location of the main pathological lesion was debated but now it has been fairly well established as the central nervous system.

## Treatment of Lithium Intoxication

Lithium passes from the bloodstream into the tissues and a dynamic equilibrium is established. Therefore, serum lithium concentration is a reliable indicator of the lithium content of the organism, and may be used to monitor treatment. During continuous lithium administration, serum values of 1.5

mEq/L or higher indicate impending intoxication and should lead to a reduction of the lithium dosage. During the recovery phase of lithium poisoning the symptoms may persist even though the serum level is below the toxic level. The reverse is also true. Horowitz and Fischer<sup>7</sup> reported a patient that had a serum level of 8.20 mEq/L and believed the relative paucity of symptoms were due to the slow transfer rate between the blood and the brain.

The treatment of lithium intoxication was in the past largely unknown. Patients were given large doses of potassium chloride or sodium chloride which, depending on the severity of the symptoms, had little to do with the ultimate outcome. Modern diuretics were all tried in an attempt to increase the renal excretion of lithium, and were also without effect. Hemodialysis has proven to be the fastest and the most effective means of rapidly eliminating lithium from the bloodstream, but due to cost and the relative availability of facilities it is used only in the most severe cases. In 1968, Thomsen and Schou studied the renal elimination of lithium on six healthy adults. They found that the administration of an osmotic diuretic such as urea increased the renal elimination, and cited this as evidence that lithium is not reabsorbed distally in the nephron. They also found an increase in lithium excretion after administration of bicarbonate and carbonic anhydrase inhibitors. Although this might be interpreted to be the result of a change in urinary hydrogen ion concentration (pH), it doesn't seem likely, since lowering of the urinary pH was without effect on lithium excretion. It is more plausible that the increase in lithium excretion is due to an obligatory excretion of cation with the unreabsorbed bicarbonate. This is supported by data that shows that infusion of sodium thiosulfate, which leads to obligatory cation excretion, also produces a significant rise in the excretory fraction of lithium. Aminophylline was also found to increase the renal excretion of lithium. The exact mechanism of action is unknown but some workers in the past have postulated that aminophylline has a direct effect on the kidney tubules. The other widely held theory is that aminophylline increases the renal blood flow and by increasing the glomerular filtration rate promotes rapid excretion. They concluded that osmotic diuresis, alkalization of the urine, and the administration of aminophylline exert a rapid action on lithium excretion and may be used individually or in combination.

### Case Report

December 4, 1969 was the second admission for this 53-year-old Caucasian female. The history was obtained from the patient and from her 15-year-old son. She had suffered from manic-depressive psycho-

sis, depressive type, for the past 20 years. She had been treated previously with mood elevators and electroshock therapy, but had frequent exacerbations of her depressive episodes. She was admitted to the Kansas University Medical Center in July, 1968 in a very depressed state. During her hospitalization she was started on lithium carbonate, 900 milligrams per day in divided doses. She responded well and had relatively few depressive episodes. She was maintained on 900 milligrams per day until August, 1969, when the dosage was increased to 1200 milligrams per day. This was maintained until November, 1969, when she appeared very depressed and the dosage was increased to 1500 milligrams per day. Serum lithium levels were maintained between 0.5 mEq/L and 1.1 mEq/L. Two months prior to admission she had noticed the onset of diarrhea and some mild gastric upset, but no other symptoms were present at that time. She had begun a weight reducing diet, consisting mostly of eggs, and had decided to limit her dietary intake of salt due to peripheral edema. She had begun to feel a generalized weakness two weeks prior to admission and on one occasion had noticed a twitching or jerking on the right side of her body that quickly subsided. Two days prior to admission her son noticed that she had begun to be very forgetful and to do some peculiar things. On the night prior to admission she was found walking around the house at 2:00 a.m. and was disoriented as to time and place. She related no history of head trauma, headaches or seizures.

On admission the patient presented as an obese, obtunded female who was cooperative but disoriented as to time and place. Blood pressure was 150/80, pulse was 68 and regular and her respirations were 16. She had a harsh grade III/VI decrescendo systolic murmur heard at the apex that radiated poorly to the aortic area and the left sternal border. There were no other abnormal cardiac findings. There was a marked reduction in recent and remote memory. She exhibited some truncal ataxia but no focal motor loss. Pain, light touch and vibratory senses were decreased but intact bilaterally. There was no nystagmus, tonus or clonus. She was hyper-reflexic but there were no pathological reflexes present. The remainder of the neurological examination was unobtainable because of the patient's inability to cooperate.

A serum lithium level was drawn on admission and it was 4.0 mEq/L. Electrolytes, BUN, and creatinine were all within normal limits (*Table 1*). A PBI drawn at admission was 2.0, and 24-hour later I<sup>131</sup> uptake was 2 per cent. The patient became more lethargic, alternating with periods of agitation. She could be aroused with painful stimuli and was otherwise unresponsive to verbal commands. She de-



TABLE 1

Date and Time	Serum				Urine							
	Li*	Na*	K*	CL*	CO <sub>2</sub> *	BUN†	CREAT.†	Na*	Li*	K*	CREAT.†	VOL.‡
12/4												
1:00	4.0	139	3.4	105	20							
5:00		144	3.8	104	22	23	1.9					
7:00	3.5	125	7.1	99	24	21	1.7	63	25.1	18		95
9:00	3.0	133	3.3	98	28			28	9.3	4.0		410
11:00	3.0	132	3.4	94	28	20	1.6	27	11.1	5	44	305
12/5												
1:00	3.0	133	4.5	99	26	19	1.6	51	11.1	11	30	370
7:00	2.6	131	3.7	99	22	16	1.5	41	7.2	7	18	995
10:00	1.6	138	4.3	110	20	11	1.4					2007
2:00	1.5	141	4.2	111	21	1	1.3	80	5.0	5.3	13	1900
12/6	1.4											
12/7	1.3	134	4.2	107	19							
12/8	.6	138	4.2	108	20							
12/11	.1	137	5.0	102	26							

\* = Values are in mEq/L.

† = Values are in mg %.

‡ = ml per collection period.

veloped fasciculations, largely on the right side of her body and some athetoid movements. At one point she developed transient bilateral Babinski reflexes and clonus. A spinal tap was performed and was later reported as normal. There was no lithium level done on the spinal fluid. At the time of admission, because of her moderately impaired mental status it was elected not to hemodialyze her but to attempt to reduce the serum lithium level by a vigorous diuresis. This was accomplished and the patient left the hospital nine days after admission. She was found to have a microcytic hypochromic anemia and hypothyroidism and was treated appropriately.

## Methods

The diuresis of this patient was done according to the findings of Schou.<sup>10</sup> During the first two hours following admission, diuresis was attempted using a large volume of intravenous fluids. After two hours, 25 grams of mannitol was given by intravenous push. Two hours later 66 mEq of sodium bicarbonate was given by intravenous push, and two hours following that 500 milligrams of acetazolamide was given by intravenous push. This was followed in two hours by a mannitol drip which was given in two liters of dextrose and water. This was continued for six hours at the end of which 500 milligrams of aminophylline was given by intravenous push. Serum electrolytes and urine samples were collected for the period of time that the drugs were being used. All determinations were made by the clinical laboratory of the K.U. Medical Center.

## Results and Conclusions

The data collected is presented in *Table 1*. From this data the clearance of sodium, creatinine and lithium were calculated. The excretion fraction of lithium was calculated as the ratio of the lithium clearance to the creatinine clearance. This is based on the assumption that the creatinine clearance approximates the glomerular filtration rate. The fractional excretions of lithium were always less than one, indicating that lithium must be reabsorbed either actively or passively. As can be appreciated from *Table 2*, the lithium clearance increased markedly during the various treatment periods. The greatest increase occurred following the administration of aminophylline. The excretion fraction of lithium is also noted to have increased, the greatest increase occurring with aminophylline administration. Mannitol produced a threefold increase in the excretion fraction of lithium over the control period. Aminophylline doubled the excretion fraction over that of mannitol. The administration of mannitol appeared to influence the excretion fraction, a significant increase occurring when it was given by intravenous drip. The ratio of the clearance of lithium to the clearance of sodium was calculated (*Table 2*) in an attempt to see if there was any difference in the handling of these two ions. The data indicates that lithium was excreted preferentially to sodium despite the large difference in their serum concentration. The increase in the clearance of lithium without appreciable alteration in the clearance of



TABLE 2

	$C_{Li}$	$C_{Cr}$	$C_{Na}$	$C_{Li}/C_{Cr}$	$C_{Li}/C_{Na}$	$Li_{Reab.}$
Control	5.2	100.0	0.6	0.05	8.7	355.1
Mannitol						
I.V. Push	9.9	64.2	0.7	0.15	14.1	113.5
NaHCO <sub>3</sub>	9.2	70.0	0.5	0.13	18.4	182.0
Acetazolamide (Diamox.)	11.2	57.8	1.18	0.20	9.5	140.0
Mannitol						
I.V. drip	11.4	50.1	0.82	0.23	13.9	115.0
Aminophylline	24.8	79.2	4.50	0.31	5.5	79.0

sodium caused by mannitol and bicarbonate provide evidence to support Schou's proposal<sup>10</sup> that lithium and sodium are not handled by the same renal mechanism, or at least lithium is handled with less efficiency. The greatest decrease in lithium reabsorption was produced by mannitol and aminophylline, while bicarbonate and acetazolamide decreased lithium reabsorption but were substantially less effective than mannitol or aminophylline.

There are many shortcomings to the study involved here but it does provide the basis for future investigations and study. The series is too brief to allow one to draw any conclusions and the periods of drug administration overlap and perhaps do not allow enough time for their full effect to be observed. Perhaps, too, we are seeing the effects of one drug in the time period allotted to another. We must also consider whether or not the effects observed were due to an actual inhibition of reabsorption of merely a flow phenomenon, i.e., the flow of glomerular filtrate is increased markedly allowing less time for the lithium ion to be exposed to the sites for reabsorption in the proximal tubule. This does not appear to be the case in all instances except aminophylline. As long as the creatinine clearance is falling and the lithium clearance is rising, then it can be stated that the reabsorption of lithium is being inhibited. This was not observed with aminophylline and hence the increase in renal excretion of lithium under the influence of aminophylline may not be due to a specific inhibition of reabsorption but related to a greater urinary flow rate. Although much work needs to be done in the toxicology and treatment of lithium intoxication, the results reported here provide a basis for further investigations.

## Summary

—Osmotic diuresis, alkalization of the urine, and aminophylline all increase the renal excretion of lithium.

—I found that the excretion fraction of lithium was greatest with the administration of aminophylline.

—The administration of mannitol by intravenous drip was more effective in increasing excretion of lithium than was mannitol by intravenous push.

—Mannitol and bicarbonate produced a preferential inhibition of reabsorption of lithium as compared to sodium.

—Hemodialysis is the most effective means of treatment for severe intoxications with lithium and should be used if warranted by the clinical condition of the patient.

—In less severe cases of lithium intoxication or in the absence of hemodialysis facilities, lithium excretion can be markedly increased by aminophylline and to a lesser degree, by mannitol, acetazolamide and bicarbonate.

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(Continued on page 38)

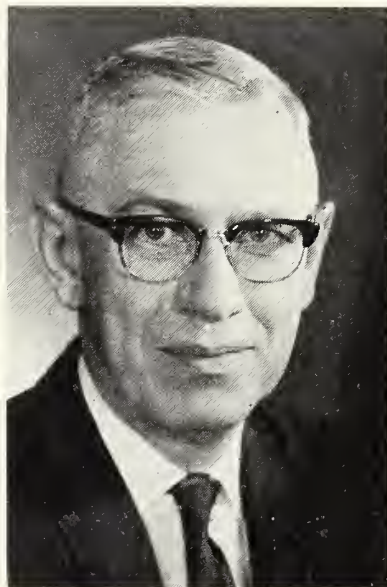
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## The President's Message

Revolution has been defined quite accurately as "a movement of dissent that succeeds in obtaining power." The above description is by the French author Jean Francois Revel, in his book, *Without Marx or Jesus* (Doubleday, New York, 1971).

The description seems most appropriate when we as physicians consider the oft repeated phrase that we are experiencing a revolution in the health care system. Yet today the traditional forms of patient care, hospital care and the entire health system retain much of the ways, the methods and the advantages of the past. What we often describe as revolution is in fact only subtle shifts and changes in techniques and perhaps in philosophy. There have not been many revolutions that have succeeded. The American Revolution that established our nation is certainly one that did, and the French Revolution that overthrew the monarchy and established the republican form of government in that nation is another. Even the political dissent and student protests of recent times have not changed the American system, but rather our country more nearly trods the center of the road than it does the fringes in political thought.

We should pause occasionally and ponder those who have formed not only our nation and shaped its course, but also those in medicine, the older generations, who gave to us the present method of caring for illness and disease. The existing system of health care just within five decades has increased life expectancy by over 50 per cent, and at the same time the worker's day has been cut by a third. The generation before us has given us a healthier world than they found, and because of this, we no longer experience epidemics of influenza, typhus, diphtheria, smallpox, scarlet fever, measles or mumps. Even poliomyelitis is no longer the scourge of youth, and tuberculosis has all but disappeared from the American scene. At the same time, we should remember that the group that accomplished these miracles in medical care lived through one of history's greatest economic depressions and through two frightful wars that disrupted not only the national life of America, but of Europe and Asia as well. The results of their efforts are an American people who are the tallest, healthiest, most intelligent, and probably best looking individuals to inhabit this land or any other.



In addition, the generation before us defeated the tyranny of Nazism in Germany, and then had the compassion to spend the billions of dollars needed to help our former enemies rebuild and revitalize their nations.

Finally, it was these older generations also who fought racial discrimination through the highest courts of our land and began a new era in civil rights in the United States.

As we said in the beginning of this brief comment, let us again remember that those of us closest to change are apt to call it revolution; to this writer it appears that revolution in the health care system is probably the least likely event that will come about.

*Dr. J. Reals, M.D.*

*President*



## Editorial COMMENT

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### *The Freedom and the Responsibility*

On July 1, 1970, new laws relating to the performance of abortions in Kansas went into effect, making Kansas one of the few states which had accomplished this official liberalization. Some see the step as a worthy and timely approach to an age-old problem. Others see it as a giant step toward perdition. Some statistical facts relating to the first year's experience are summarized in the State Department of Health report appearing in this issue of the JOURNAL. In addition, Evalyn S. Gendel, M.D., Director of the Division of Maternal and Child Health, amplifies and discusses this experience in her article.

The fact that the new laws were passed was due to a combination of diverse factors. There can be no doubt that national expression was being given to the reevaluation of the social concept of abortion. The legal profession, always a potent factor in influencing the direction of legislative trends, had come up with the Model Penal Code from which the Kansas laws were adapted. The medical profession (though not unanimously) had become sufficiently impatient with the strictures and hypocrisies of the previous laws to offer strong support, if not prime activation, to the change. In addition, the Legislature was in the act of some statutory housecleaning and the change was politically expedient. One year of experience under the new laws tells us little of the long range value of the change, but it has done two things. It has precipitated some intramural disturbances within the profession, and it has stimulated counterefforts by some hoping to return to at least the former restrictions.

It might be well to review the history of the change in order to gain some perspective on the present situation. The old laws prohibited the performance of abortion except where it was deemed necessary to save the life of the mother. If this necessity could be established, however, it placed no control on the individual, place, or method of performance of the abortion. Furthermore, the physician who did conclude this procedure was necessary, and accomplished it, had no prior legal protection but auto-

matically placed himself in jeopardy of punitive action unless he could prove his case in court, a not particularly attractive way to practice medicine. The practical effect was that the physician was obstructed in his medical function while the illegitimate abortionist thrived with the law and medicine looking the other way. Regardless of the questionable morality reflected in this situation, the toll in life and health for women who were denied a medically-sanctioned abortion, and thus sought one illegitimately, was serious. The indirect effects expressed in subsequent damage to her health and the accessory effects upon her family are inestimable.

Those proposing to change the laws sought first of all to focus the effort on the medical aspects of the problem. There was no expectation that the illegitimate abortion problem would be completely solved. The very establishment of controls and regulations of performance carries the obvious effect that there would be some cases which did not qualify, and the unspoken realization that some of these would still resort to illegitimate termination. In other words, abortion "on demand" was neither desired nor sought. The aim was to be able to offer abortion as a therapy when a pregnant woman suffered a condition so likely to precipitate or compound a health problem that the dictates of good medical care required the elimination of the offending agent, the pregnancy. Social pressure added the "prophylactic" element, the inclusion of pregnancy resulting from rape, incest, or felonious assault, or with a predictably damaged child.

It was not given to the individual physician to have either the license or the total responsibility to arrive at the decision himself. It was required that two consultants agree with the necessity of the procedure. Further, it was required that the procedure be carried out in a licensed and accredited hospital, an additional assurance that it could not be accomplished without professional scrutiny and control.

It needs to be emphasized, however, that the underlying concept of the effort was freedom. Not only



freedom to do abortions if thought medically necessary, but freedom, as well, not to do them if it was contrary to the dictates of conscience or morality of an individual physician. Freedom on the part of the individual patient to have a medically advisable abortion—or not to have it if the emotional or moral value of the pregnancy was for her too high. It was required that the abortion be done in a hospital, but it gave the hospital freedom to refuse to permit abortions within its walls, as many have done.

Any contention between the proponents and opponents of a "liberalized" abortion law must eventually devolve into a struggle of moral concepts and is, therefore, never completely capable of a satisfactory and universal resolution. In the light of the two-way permission effected under this law, it would seem that those seeking to reimpose the restrictions of earlier times were acting from their own sincere and unassailable convictions, theirs being the one right and absolute morality. They sincerely seek to bring salvation rather than condemnation to a society which countenances such procedures, just as others, with equal sincerity and conviction, seek the elevation of mankind in their effort to arrive at a relative value concept of spiritual currency. Freedom of choice, imperfect as it may be, is the expression of man's inherent fallibility and his continuing effort to achieve the divine level of infallibility. But by freedom we do not mean total permission. License without restraint and prohibition without recourse alike deny the value of intellect. Moral dictatorship is as reprehensible as political dictatorship, and as dangerous, when it purports to promote the sanctity of the individual.

If the present law provides the accepting physician with a greater freedom to practice medicine according to his professional and moral tenets, it imposes a greater responsibility upon him to see these tenets applied consistently and honestly. At any given time, the state of the world represents at best an uneasy balance of social, economic, moral, spiritual, and political pressures. The abortion laws currently in effect are neither right nor wrong for all time—they are a manifestation of these pressures translated through legislative action into statutory regulation. The degree to which they serve society well is the product of the individual experience, conscience, and medical judgment of the physician as applied to his patients. This is a medical responsibility in the highest sense. This is a responsibility the significance of which must not be lost in expediency.—D.E.G.

THERAPEUTIC ABORTION STATISTICS  
BY RESIDENCE OF PATIENT  
KANSAS, JULY 1, 1970-JUNE 30, 1971

<i>Residence of Patient</i>	<i>Number</i>
Total .....	8,549
Kansas residents .....	3,244
Out-of-state residents .....	5,305
Alabama .....	1
Arizona .....	3
Arkansas .....	30
California .....	4
Colorado .....	58
Florida .....	6
Georgia .....	1
Illinois .....	1,283
Indiana .....	17
Iowa .....	746
Kentucky .....	3
Louisiana .....	5
Maryland .....	1
Michigan .....	3
Minnesota .....	11
Mississippi .....	2
Missouri .....	2,310
Montana .....	2
Nebraska .....	72
Nevada .....	1
New Mexico .....	2
North Dakota .....	4
Ohio .....	3
Oklahoma .....	640
Oregon .....	1
South Carolina .....	1
South Dakota .....	21
Tennessee .....	4
Texas .....	56
Utah .....	2
Virginia .....	1
Washington .....	1
Wisconsin .....	3
Wyoming .....	7

Patients include 34 out-of-state residents and residents of 98 counties within the State.

## SELECTED THERAPEUTIC ABORTION STATISTICS

STATE OF KANSAS, JULY 1, 1970-JUNE 30, 1971

	Number	Per Cent		Number	Per Cent
<i>Age Group of Patient:</i>					
Total	8,549	100.0	25 weeks and over	6	0.1
Under 15 years	130	1.5	Not stated	42	0.4
15-19 years	2,495	29.2	<i>Primary Indication for Abortion:</i>		
20-24 years	3,058	35.8	Total	8,549	100.0
25-29 years	1,242	14.5	Mental health	7,676	89.8
30-34 years	787	9.2	Physical health	364	4.3
35-39 years	576	6.7	Felonious intercourse	327	3.8
40-44 years	229	2.7	Fetal defects	116	1.3
45 years and over	18	0.2	Rape	48	0.6
Not stated	14	0.2	Emergency existed	11	0.1
<i>Race of Patient:</i>			Incest	5	0.1
Total	8,549	100.0	Not stated	2	0.0
White	7,645	89.4	<i>Method of Abortion:</i>		
Black	693	8.1	Total	8,549	100.0
Other	101	1.2	Vacuum method	4,405	51.5
Not stated	110	1.3	Dilatation and curettage	3,318	38.8
<i>Marital Status of Patient:</i>			Intra-amniotic injection	576	6.7
Total	8,549	100.0	Extra-amniotic injection	159	2.0
Never married	5,542	64.8	Hysterectomy	69	0.8
Married	2,254	26.4	Hysterotomy	17	0.2
Divorced	575	6.7	Other	3	0.0
Separated	136	1.6	Not stated	2	0.0
Widowed	39	0.5	<i>Type of Consultation:</i>		
Not stated	3	0.0	Total	8,549	100.0
<i>Weeks Gestation:</i>			Individual consultants	6,660	77.9
Total	8,549	100.0	Committee review	1,888	22.1
Under 9 weeks	2,657	31.1	Not stated	1	0.0
9-12 weeks	4,676	54.7	<i>Number of Days in Hospital:</i>		
13-16 weeks	869	10.2	Total	8,549	100.0
17-20 weeks	271	3.2	One day	5,661	66.2
21-24 weeks	28	0.3	Two days	1,748	20.4
			Three days and over	1,110	13.0
			Not stated	30	0.4

SELECTED COMPARABLE STATISTICS FOR 12-MONTH PERIODS  
STATE OF KANSAS, JULY 1, 1969-JUNE 30, 1970 AND JULY 1, 1970-JUNE 30, 1971

Selected Statistics	July 1, 1969 to June 30, 1970	July 1, 1970 to June 30, 1971	Per Cent Change
Number of registered therapeutic abortions	—	8,549	†
Number of registered live births	35,593*	36,048*	1.3
Number of abortions per 1,000 live births	—	237.2	†
Number of maternal deaths	7	5	-28.6
Number of maternal deaths related to therapeutic abortions	0	0	0
Number of illegitimate live births	2,955*	3,130*	5.9
Per cent of live births reported as illegitimate	8.3	8.7	4.8
Number of registered stillbirths, excluding therapeutic abortions	426	447	4.9

Occurrence data.

\* Figures are provisional.

† Not applicable.

# Medical-Legal Page

## Damages for Birth of Child After Unsuccessful Sterilization

Damages may be recovered when a patient becomes pregnant after an operation for sterilization, according to a Delaware trial court.

In 1966, a physician, assisted by hospital personnel, performed a bilateral tubal ligation upon the patient following the birth of her fourth child. Before the birth, the parents had discussed with the physician the possibility of a sterilization operation and had agreed that such surgery be performed after the child was born. Subsequently, the mother became pregnant and in 1968 a fifth child was born to her.

Suit was filed against the physician and the hospital, seeking damages for (1) pain and suffering resulting from the pregnancy; (2) the cost of the operation for sterilization; (3) the loss to the husband of the wife's consortium; (4) the loss of care and support resulting to the other children caused by the birth of the new child; (5) the medical expenses incurred as a result of the pregnancy; and (6) the expenses of the care and maintenance of the new child.

Dismissal of the suit was asked on the ground that there is no cause of action in the state of Delaware for "wrongful life."

In denying the motion to dismiss, the court held that there is a protected right not to have children, in view of the U. S. Supreme Court's decision in *Griswold v. Connecticut*, 85 S.Ct. 1678, holding that a state may not ban the use of contraceptives by married couples.

Conceding that the rewards of having a child are a factor to be considered in determining damages, the court said that it cannot be said as a matter of law that a healthy child always confers a benefit greater than the expense of his birth and support. The jury should be allowed to weigh the benefit against the economic burden, because the advantage which a child brings his parents mitigates the damage of his support. In calculating the award for the child's support and education, the jury may subtract the benefits which the child gives his parents.

Also compensable, the court said, were the pain and suffering of the pregnancy and the medical expenses caused by the pregnancy, since both were the reasonably probable results of negligent sterilization.

One of the reasons the parents sought sterilization was to maintain a certain standard of living, a certain amount of love and affection, and a certain amount

of parental protection for the four children they then had. Since the birth of a fifth child will upset the portion allotted to each child, such a change in family status is compensable in the award for damages.

As to the expenses of a second sterilization, the patient would be entitled to recover such costs if it should be determined that a second operation would minimize damages.—*Coleman v. Garrison*, 281 A.2d 616 (Del.Super.Ct., Aug. 23, 1971)

## Peer Review Committee Records Held Protected

A 1971 Hawaii statute protecting the confidentiality of peer review committee records of medical societies and hospital medical staffs was upheld in a recent court action.

The executive director of the Hawaii Medical Association was subpoenaed to produce all records and correspondence relating to a court action involving a dispute between two physicians. An objection to the subpoena was sustained and the subpoena was quashed.

In addition to protecting the confidentiality of records, the statute also provides that no person present at a meeting of a peer review committee shall be obliged to testify as to what occurred at the meeting. Among the specified exceptions to the privilege of confidentiality is any action against an insurance carrier alleging bad faith in refusing to accept a settlement offer within the policy limits.—*Hawaii, H.B. No. 637, Act. 207, June 21, 1971; upheld, Silver v. Gordon* (Cir.Ct., Honolulu, Hawaii, Sept. 21, 1971)

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

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**Phillip K. Hill, M.D.**  
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**John A. Morris, M.D.**  
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**Ronald L. Pitts, M.D.**  
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**KANSAS STATE DEPARTMENT OF HEALTH**  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity Incidence  
Summary of Cases Reported in October, 1971 and 1970

<i>Diseases</i>	<i>October</i>			<i>January-October Inclusive</i>		
	1971	1970	5-Year Median 1967-1971	1971	1970	5-Year Median 1967-1971
Amebiasis .....	1	5	1	18	24	14
Aseptic meningitis .....	3	4	1	12	26	10
Brucellosis .....	—	—	—	1	2	1
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	31	12	6	42	24	20
Encephalitis, post-infect. ....	—	1	—	6	1	2
Gonorrhea .....	19	635	504	6,233	5,755	4,271
Hepatitis, infectious .....	32	39	32	525	409	340
Measles (Rubeola) .....	3	—	*	1,392	69	*
Meningococcal meningitis .....	1	3	2	28	8	15
Mumps .....	51	—	*	857	143	*
Pertussis .....	1	5	1	12	8	8
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	1	4	3
Rubella (German Measles) .....	5	—	*	619	51	*
Salmonellosis .....	29	35	17	185	229	229
Scarlet fever .....	3	5	3	48	78	48
Shigellosis .....	44	34	8	786	112	81
Streptococcal infections .....	495	318	262	4,095	3,717	2,423
Syphilis .....	105	164	154	1,162	1,204	1,162
Tinea capitis .....	1	12	1	14	34	35
Tuberculosis .....	10	19	19	128	177	177
Tularemia .....	—	—	—	3	1	3
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.

### SMALLPOX VACCINATION FOR INTERNATIONAL TRAVEL REQUIREMENTS AND RECOMMENDATIONS

"Effective immediately a Smallpox Vaccination Certificate as a condition of entry into the United States shall be requested only of those persons who, within the preceding 14 days, have been in a country reporting a smallpox infected area(s). . . . Those persons not in possession of a valid Smallpox Vaccination Certificate may be issued a surveillance order and placed under surveillance by State and/or local health departments."

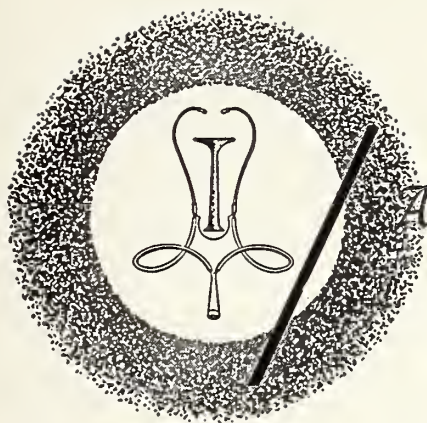
Advisory Memorandum No. 26  
U. S. Public Health Service  
October 1, 1971

It should be emphasized that smallpox vaccination

requirements of countries *other* than the United States *have not changed*.

The traveler must consider not only the requirements of the United States but also the requirements of each country on his itinerary and be immunized accordingly. The sequence in which countries are visited may determine the immunization required. Almost without exception, health authorities in all countries will require a valid smallpox vaccination certificate of all travelers who, within the 14 days preceding arrival, have been in a country reporting smallpox. Failure to possess a valid certificate may result in vaccination on arrival or quarantine or surveillance by health authorities for a period up to 14 days.

It is the recommendation of the Public Health Service that persons planning to travel to Brazil, to any country in Africa, or to any country in Southeast Asia be vaccinated against smallpox for their own protection.



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### JANUARY

- Jan. 13-15 American College of Physicians. Broadmoor Hotel, Colorado Springs. Write: William A. H. Rettberg, M.D., 4200 E. 9th Avenue, Denver, Colorado 80220.
- Jan. 17-19 American College of Surgeons Sectional Meeting. Sheraton-Four Ambassadors Hotel, Miami. Write: Robert Zeppa, M.D., University of Miami School of Medicine, Miami 33100.
- Jan. 26-28 Annual Midwinter Cancer Seminar, Colorado Division of the American Cancer Society. Vail Village Inn, Vail, Colorado 81657.

### FEBRUARY

- Feb. 14-16 American College of Surgeons Sectional Meeting, Chase-Park Plaza, St. Louis. Write: T. E. McGinnis, American College of Surgeons, 55 E. Erie Street, Chicago 60611.
- Feb. 25 American College of Physicians (Kansas Regional). Topeka. Write: John L. Morgan, M.D., 919 West 12th Avenue, Emporia, Kansas 66801.

### MARCH

- Mar. 1-5 American College of Cardiology Annual Scientific Session. Conrad Hilton, Chicago. Write: William D. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Bethesda, Maryland 20014.
- Mar. 13-15 American College of Surgeons. Joint meeting, nurses/doctors. Sectional Meeting. Bellevue-Stratford Hotel, Philadelphia.
- Mar. 16-17 25th National Conference on Rural Health, sponsored by the AMA's Coun-

cil on Rural Health. St. Francis Hotel, San Francisco.

- Mar. 23-26 Athletic Injury Briefings, National Coaches Conference. University of Notre Dame. Write: Notre Dame Center for Continuing Education, South Bend, Indiana.

### POSTGRADUATE EDUCATION

#### University of Kansas:

- Feb. 1-4, Feb. 29-Mar. 3 Kansas Circuit Course for Physicians. Eastern—Manhattan, Hutchinson, Winfield, Emporia. Western—Concordia, Colby, Dodge City, Hays. Subjects: *The High-Risk Infant; Cancer; Cardiovascular Diseases.*

- Feb. 7-8 *Cardiac Auscultation*  
Feb. 23 *The Mentally Handicapped Child*  
Mar. 6-8 *Pediatrics*

For further information on the above courses write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City, Kansas 66103.

#### University of Colorado:

- Jan. 23 *Colorado Academy of General Practice Annual Sunday Symposium*  
Jan. 24-29 *General Practice Review*  
Feb. 7-12 *(repeat of January GP Review)*  
Feb. 14-18 *High Risk Infant Care*  
Feb. 23-26 *Surgery of the Hand*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 80220.

*(Continued on page 38)*

University of Missouri-Columbia School of Medicine:

Jan. 12-13 *Postgraduate Symposium on Practical  
Obstetrics and Gynecology*

Jan. 20 *Medical Laboratory Workshop*

Feb. 2 *Office Pediatrics*

For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.

## The Advantages and Need for Peer Surveillance

(Continued from page 4)

counter will be listed. Third parties should identify their subscribers and maintain the patient's utilization records in a uniform manner.

Charges to the third party financing agency will be made on the basis of a monthly charge for each participating physician and a unit charge for each report.

Estimates of the benefits to third-party health financing agencies of automated direct-line claims reporting indicate the savings in administrative costs alone would justify the expenditures of approximately \$50.00 per month for the peripheral terminal in each participating physician's office, and payment of the costs for data transmission to the third party. Only through the results of pilot projects can the actual savings in administrative costs and the benefits of effective peer quality surveillance be determined.

## Voluntary Health Insurance Industry

(Continued from page 9)

This is a pretty darn good payoff.

One of the major principles of the HIAA's program is that we should build on present strengths, making reforms where necessary. As the various proposals for national health insurance have been exposed to public review, we have become increasingly confident that the political moderates in the Congress will look behind the smoke screen thrown up by those who would eliminate health insurers from the national scene and will conclude there is much the health insurance industry can do to help.

For our part, we realize we are part of the problem of increasing health care costs in today's society. But we would further argue that such a charge can be applied with equal vigor to physicians, hospital administrators, government itself, as well as to the public which demands unlimited services.

We are ready to make some changes. We hope you are too.

## Innovations in Medical Care

(Continued from page 13)

Finally, I would stress these characteristics of a Foundation:

- It is a nonprofit corporate entity that is a committee of a local medical society totally controlled by that society.
- Its basic interests are in the establishment of sound health insurance policies, control of costs and utilization and at the same time assurance of quality control to the recipient.
- It is innovative. It develops new methods and new programs for the delivery of health care to meet the challenges of our times.
- It is not an insurance company.
- It can complement the Blue Plans.

## Can You Be Your Own Man?

(Continued from page 17)

present. You will reap the professional reward of facing and surmounting the challenge of delivering more and better health care, and you will enjoy the financial reward that goes with success.

There is, in short, a growing freedom from financial worry and a growing lack of freedom to do exactly as you please in your professional life. The final result is a new mix of challenges—probably greater than in the past, and certainly different.

## The Physiology and Toxicology of Lithium

(Continued from page 30)

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## *Personalities*—IN KANSAS MEDICINE

D. E. Frederickson, D. D. Fuller and M. C. Murfitt, Lindsborg, participated in the diabetes detection program in McPherson County recently. The McPherson County Medical Society sponsored Diabetes Week in recognition of the 50th anniversary of the discovery of insulin.

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William C. Dreese, Halstead, was the speaker at the annual meeting of the Ellsworth County Mental Health Association.

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Hertzler Clinic, Halstead, has added a new member to the staff. He is Charles R. McReynolds. Dr. McReynolds is a pathologist.

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D. W. Gurney, Kansas City, has been appointed to the National Advisory General Medical Sciences Council of the National Institutes of Health.

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Trends in genetic counseling were discussed by David E. Gray, Topeka, at the annual meeting of the Topeka Association for Retarded Children.

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Robert C. Long, Norton, returned from an extensive tour of Greece, Yugoslavia, Iran and Austria. Following the tour, Dr. Long worked for five weeks in a clinic in Afghanistan.

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An assembly was conducted for Newton chemistry students recently by Jay S. Benton and Vernon E. Yoder, Newton.

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Thomas P. Butcher, Emporia, was elected to the Board of Governors of the American College of Surgeons.

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Red Cross volunteers were instructed by Curtis V. Wolf, Lyons, in regard to the coronary units of the hospital.

Free clinic for crippled children was recently conducted in Kansas City by C. L. Francisco, J. F. Lance, Jr., P. C. Nohe and F. W. Reckling.

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Joyce R. Sumner, Hutchinson, has been elected Assistant Secretary of the American Society of Anesthesiologists.

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Prevention and Rehabilitation of Heart Attacks was the subject of a program directed by C. J. Harwood, Glasco. The program was sponsored by local civic clubs.

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O. W. Longwood retired after more than 40 years of practice in Stafford. Dr. Longwood donated his medical clinic and equipment to the local hospital district.

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The International Congress of the American Society of Abdominal Surgeons, recently meeting in Vienna, Austria, was attended by J. Allen Howell, Wellington.

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D. Cramer Reed and James M. Donnell, Wichita, participated in a panel discussion on the award-winning program "90 Minutes," concerning the physicians shortage.

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The panel participants at a seminar on the care of stroke patients included Yusuf Qamar, Newton.

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Galen W. Fields, Scott City, returned from a teaching-treatment mission to Jamaica.

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A new addiction center was opened by Howard V. Williams, Jr., Topeka. The center was established by the Southwest Kansas Alcoholism and Drug Addiction Foundation at Liberal.

# The Month in Washington

President Nixon has appointed a 21-member Committee on the Health Services Industry to oversee inflation in health care costs as part of the Phase 2 economic program. Chairman of the advisory group is Mrs. William C. Dunn, Commissioner of the Department of Consumer Protection for Connecticut.

The Administration intends to cover physicians' services as well as those of all other providers of services in the cost control effort, but the manner in which this will be carried out has not yet been established.

While the government obviously can control to some extent payments in federal programs such as Medicare, especially for hospitals, regulating physicians' fees in the private sector is something else again. Apparently, a major thrust of the Phase 2 program as it affects physicians will be to urge voluntary compliance.

The Administration's aim is to keep charges from rising to a point where the unit profit is higher than it was in the past. Fee rises stemming from higher costs of doing business will be okay as will a certain percentage to take into account general rises in the cost of living.

The lack of a penalty-backed policing role by the government—at this date anyway—might seem to make the federal program toothless. But Administration officials are confident that public concern and public and peer pressures will make it difficult for individual physicians to hike fees substantially. Furthermore, the Administration is certain that most physicians are willing to cooperate.

Four physicians are on the panel, which also includes representatives of state and local government, consumers, hospitals, related health occupations and industries and the health insurance companies.

Physician members are: William Lotterhos, M.D., President of the American Academy of General Practice and former chairman of the AMA's section on General Practice; James Haviland, M.D., former acting dean of the University of Washington School of Medicine; Earl Brian, M.D., Director of the California Department of Health Care Services; and James Cowan, M.D., Commissioner of Health for the state of New Jersey.

\* \* \*

The decision of HEW to kill the Public Health Service's commissioned corps is sure to fan congressional interest in a separate department of health.

HEW Secretary Elliot Richardson said he was adopting a special advisory commission's recommen-

dation of last summer that the corps—composed of 5,500 physicians, dentists, engineers, nurses, pharmacists, veterinarians—be phased out and replaced with a civilian system.

While this would solve a serious internal personnel problem at HEW, the move does nothing to further Richardson's relations with Congress which has had a soft spot for the PHS Corps for many years.

Until recent years, the corps functioned as a semi-autonomous unit at HEW, with the PHS Surgeon General reporting directly to Congress, thus to some extent bypassing higher authorities at HEW. A close liaison with Congress was built up and still lingers on, hence the outcry when the Administration recently moved to close down PHS hospitals.

The reorganization of HEW carried out under HEW Secretary John Gardner firmly placed the secretary and assistant secretaries in control of the agency's health programs and diluted the powers of the Surgeon General to the extent that they are now difficult to define.

However, memories of the old days when Congress was able to call the shots at PHS remain strong and are one reason why such influential men as Rep. Paul Rogers (D., Fla.) are set on establishing a separate, cabinet-level department of health. The reasoning is that only this would give Congress the power it seeks over how the federal government administers its huge health empire.

\* \* \*

The Senate's reluctance to come to grips with the Social Security Amendments of 1971—unfinished business in the last session of the previous Congress—has been attributed to wide disagreement among members as to how to proceed with that portion of the proposed legislation that would establish a new family assistance welfare plan.

On the positive side, however, with respect to the 92nd Congress' attention to health matters is its success with legislation designed to sharply increase the training of physicians, nurses, and other medical personnel.

The measure provides grants to medical schools and nursing schools to help finance additional construction and to encourage the enrollment of additional students. It also provides loans and grants directly to medical and nursing school students.

Dr. Merlin K. DuVal, assistant HEW Secretary for Health and Scientific Affairs, said the nation faces a shortage of 50,000 physicians and as many

as 200,000 nurses by the end of this decade unless action is taken.

DuVal said the legislation could increase by about 1,200 first year enrollment of physician candidates in medical schools next year, a ten per cent increase in the first year places.

\* \* \*

The American Medical Association's testimony before the House Ways and Means Committee hearings on national health insurance attracted for one of the few times during the marathon sessions most of the Committee members, though Chairman Wilbur Mills was away on the campaign trail.

The AMA urged adoption of its national health insurance proposal—Medicredit—as a program that "can be put into operation now."

The AMA proposal, which offers both basic and catastrophic coverage for all Americans not covered by Medicare, was set forth in testimony before the House Ways and Means Committee by Dr. Max H. Parrott, Chairman of the AMA Board of Trustees, and Dr. Russell B. Roth, Speaker of the AMA House of Delegates.

The AMA Medicredit proposal, whose 160 sponsors in Congress are the most for any national health insurance proposal, would provide both basic and catastrophic coverage for all Americans under age 65. (Medicare would continue for all those over 65.) It is based on a system of tax credits with the government paying the cost for those who have little or no income. The government would also pay the premiums on the catastrophic coverage for all citizens. (The AMA estimates Medicredit would cost about \$14 billion a year. H.R. 22 would cost at least \$60 billion a year in new tax money, according to a recent study by the Department of Health, Education and Welfare.)

Under its basic coverage, Medicredit provides comprehensive benefits in respect to hospital inpatient and outpatient services, as well as full physician services. Its catastrophic coverage includes full hospitalization and additional extended care, with a continuation of outpatient services and full physician services.

"It puts these benefits within the reach of all Americans under age 65 as a prepaid insurance package," Dr. Roth told the committee. "The benefits are uniform for all citizens under the program. For those with little or no income the cost would be borne by the federal government from general revenues. For those with a capability to pay part of the costs, the program is realistically geared to encourage them to do so. The motivation for participation would, we believe, be especially strong because of our incorporation of tax credits."

## Trauma Conference

(Continued from page 23)

**Dr. Hermreck:** I would like to reemphasize some of the points made by Dr. Foret. The literature is replete with reports about the delayed complications and problems of renal trauma. The Cleveland Clinic, for example, recently reported a series of 11 patients, all of whom had minor renal trauma characterized by microscopic hematuria. These patients have been followed from 5 to 18 years, and 8 out of the 11 patients have required nephrectomy because of severe hypertension.

One out of the 8 patients did not get reversal of his hypertension with nephrectomy. The followup of these patients, therefore, cannot stop when the patient leaves the hospital, but must continue for 20 or 30 years. If hypertension develops subsequently, nephrectomy will most likely have to be carried out to avoid injury and destruction of the non-injured kidney by the hypertension.

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## STERLING DRUG ANNOUNCES GRANT TO AID BLACK MEDICAL STUDENTS

One of the nation's leading pharmaceutical manufacturers has announced a grant of \$5,000 to help black students to become physicians.

The contribution by Sterling Drug Inc., and its Winthrop, Breon and Glenbrook Laboratories divisions, was presented to the James M. Whittico Scholarship Fund as part of the program of the 75th annual meeting of the National Medical Association in Atlanta.

The fund was founded by James M. Whittico, past-president of the NMA and a surgeon and gastroenterologist on the faculty of the St. Louis University School of Medicine. Its purpose is to provide scholarships for black students in medical schools throughout the United States.



# The Miracle of Modern Medicines

During the months of May, June, and July of 1970, extensive epidemics of Hong Kong influenza occurred in Argentina, South Africa, most of Australia and several cities in New Zealand. Localized outbreaks were reported in Brazil in March and the Panama Canal Zone and Uruguay in June, and from Chile in July. In Sydney, business establishments had a 50 per cent absenteeism.

In the United States, an estimated 30 million people will not soon forget the severe pains and fevers associated with the Hong Kong flu which hit this country during 1968-69.

The only known weapons against the disease and its complications were preventive vaccines. Although medicines seemed to alleviate symptoms, there were none available which directly affected any one of over 200 known strains of the influenza virus. The symptoms of the illness did disappear however, and with little ceremony, the corner grocer, the painter, the elevator operator, the child next door—all went back to their everyday business, and, for the most part, not fully aware of the disease's morbidity and mortality ratings threatening neighbors in other parts of the world.

Nationwide or even worldwide epidemics are not new. They certainly will not wait for medical science to be ready for them. How prepared are we for another one—and, what is being done to up-grade basic research toward better pharmaceuticals to cope with such catastrophes if they should appear in the future?

In order to appreciate where we are today, and may be tomorrow in drug research, we must understand the common denominator of the process—the fact that many of the causative elements of disease are often identical in animals and man, and therefore can be studied in animals rather than risk human lives. Animal experimentation has provided the basic fabric for the development of drugs for use in humans and other living beings for the past century. It is playing an increasingly vital role today.

As an example, in 1935, it was first discovered that streptococcal infections in mice were controlled by a sulfonamide which unquestionably has since led to the saving of millions of human lives. World War II was a tremendous stimulus in the development of penicillin, first discovered in 1928 by Sir Alexander Fleming, but not developed for practical use at first. This represents a popular example of progress during the war years, where university medical centers, the pharmaceutical industry and the federal government quickly joined forces to bring penicillin to our fighting men. Likewise, antimalarial

agents, which were substitutes for quinine, were introduced during that period. Continued research with infectious diseases, mainly in mice and guinea pigs, brought another era—the broad spectrum antibiotics. They were found to be effective against a wide variety of gram positive and gram negative organisms. They rapidly became known as the "mycins"—after various trade names by manufacturers. The list of diseases which these and other antibiotics have helped control includes syphilis, pneumonia, leprosy and tuberculosis. These four have been the scourge of mankind for hundreds of years.

The availability of anti-inflammatory drugs, hormones, anesthetics, a variety of vaccines, vitamins, and the tranquilizing agents all follow similar patterns of scientific and technological progress.

The initial approach to a potential drug to combat a given illness is multi-disciplinary. Responsibility is shared by all of these specialized areas of medicine. The characteristics and symptoms of the disease may involve an abnormality of a body chemical, a cell, or groups of a particular kind of cell, a distinct type of tissue or organ—or a combination of any one or all of these.

Utilizing joint expertise, and evidence which may have been provided in past research, the disease and all of its idiosyncrasies must be precisely identified before study proceeds.

Prior to the examination of promising chemicals, a disease state similar to man's must be created in another living system. Ideally, this system would be an animal model which could serve as an exact counterpart for study of the illness in humans. In some cases, one may be in search of a means to control a disease process, such as high blood pressure (hypertension), or abnormal sugar metabolism (diabetes). In other instances, one may be seeking a means to control a disease process which simply cannot be duplicated in another species. The ultimate drug in these cases may have no direct curative effect on the diseases itself but only control some of its important symptoms. Suitable animal models would have to be developed for studies leading to the most effective agent possible.

There are other variable factors considered in selecting an animal model. Of the common laboratory animals, the dog's kidney, for instance, operates like the kidney of man. Consequently, if the researcher is studying a kidney disease, he might choose the dog as his model. A malfunctioning kidney may have an adverse effect on other organs of the body such as the heart or liver. To examine these related elements, the researcher must often develop

additional animal models, perhaps guinea pigs or non-human primates or hamsters. The different species of animals would most often be under research simultaneously with the dog to investigate all the characteristics which have been observed in the human kidney ailment. Therefore, in selecting an animal model or models, it is essential that the researcher have a working knowledge about how the organs, tissues, and cells of a variety of animal species function under many disease conditions, and how these in turn relate to the processes which must be controlled in humans. The investigator must have a thorough knowledge of the animal, the disease in the animal being studied, and the sensitivity of the animal to various broad groups or classifications of drugs.

Not only is the species of animal important, but a given strain of animal within that species may respond differently. The concept of defining the laboratory animal is becoming increasingly important. The genetics, microflora, antigenic experience, husbandry, nutrition, and even emotional history may affect drug or physiologic responses. There is concerted effort being made to seek out new species and new strains of animals which nature has possibly uniquely designed to answer specific questions.

Approximately 40 million mice, 700,000 rabbits, 200,000 monkeys, 350,000 dogs and 200,000 cats are used annually for biomedical research. A large portion of these animals serve as models throughout the process of screening compounds for potentially effective drugs.

Another difficult task of a research team is establishing meaningful assay procedures or "screens" with which to test chemical substances in animals. A screen is usually a simple inexpensive test which can be used to select the compounds which are most likely to be useful against a disease and which will be the subject of further and more intensive investigation.

Even when a group of chemical compounds is submitted for trial, there is a relatively small degree of certainty that they may act upon a specific condition in varying degrees. Chemical formulas are often modified hundreds, and sometimes thousands of times over periods of several years, before the most desirable activity is attained.

During these initial stages, attention is directed to the amount of the drug which is absorbed into the bloodstream, how it is distributed to the desired tissue, what constitutes a sufficient amount of the drug to do the job intended, how long it remains in what organ or tissue, and how it is excreted from the body. Equally important is how the substance interacts with the natural function of body fluids and organs. A drug which reaches a desired organ, such as the liver,

may not remain active at that precise site long enough to correct the problem in question.

Simultaneously, pathologists and toxicologists concern themselves with laboratory animal safety evaluation. Utilizing information acquired from other ongoing studies, a set of "protocols" or procedures to assess the safety of the compound is designed. A series of short duration tests, usually one or two weeks in length, are conducted to obtain basic evidence on what effects the compound may have on animals receiving different and usually very high dose levels of the substance. From these studies, safe dosages are determined. Meanwhile, other investigators are searching for the effects the compound may have on other tissues, organs or systems in animals. If adverse effects are observed, the researchers must consider the exact type of toxicity which has developed and how it can be eliminated. With existing federal regulations, long-term chronic toxicity studies on a potentially useful drug product take several years before it can be made available for use. All the experiments at the safety evaluation level are based on one criterion: to combine the maximum amount of effectiveness with a minimum of adverse effects.

There may be several kinds of difficulties involved in balancing harmful and beneficial effects of a drug. According to scientists, it would be fortunate if they were all dosage related problems. If this were true, the dose could simply be adjusted until the adverse reaction is no longer observed, and yet the desired effect would still be maintained. This is not the case, however, and investigators are often faced with a more complex dilemma in which the compound may affect the function of the liver or another vital organ in a way unrelated to the primary action of the drug. For example, if the compound affects the anterior pituitary, there is a whole series of related events that can happen. The altered action of the pituitary gland may affect the function of the gonads, adrenal glands, and in turn the blood pressure.

One or a combination of these events can produce undesirable side effects. Unless they can be eliminated, which may take years and millions of dollars, the drug is a failure.

The significance of safety evaluation studies are extremely important in relation to man. Reactions of chemicals in basic animal studies must be precisely understood. The fact that a given species of animal may have an adverse reaction from taking a chemical has little significance until data are expertly analyzed. All chemicals are toxic to an animal or human being at some level.

Further, there is no chemical entity that has only one effect in a living organism. While the animal is



the primary test tube, researchers must examine different species of different ages and sexes before speculating on its effect in humans. What is a powerful toxin to one species of animal may not be to another. If the only tests for penicillin were made with guinea pigs, the drug would not be available today, because penicillin is highly toxic to guinea pigs.

An attempt to gain insight into treatments and cures for disease, one of which could cause a future epidemic, brings us to boundless numbers of great minds and their laboratories. Innovators like the Jenners, the Pasteurs, the Flemings and hundreds of other great men and women of medical science are with us today. The conquest of disease will undoubtedly be a never-ending effort.

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Geriatric Pharmaceutical Corporation has made available prints of a 16 minute, 16 millimeter, color and sound film entitled "Decision." The film was prepared in cooperation with the Self Employment Group of APTA and selected pharmaceutical manufacturers, and was filmed at the University of California Department of Physical Medicine and Rehabilitation.

The film is tailored to students at the high school or early college level, and portrays the background and activities of the physical therapist. It follows the activity of the therapist through his professional training and practice, in the classroom, in the hospital, in the office and in the home. The film is strictly non-commercial, no products or devices are advertised or recommended.

"Decision" is of invaluable assistance to R.P.T.'s who are called upon by civic and other groups to talk about their work, since its comprehensive explanations cover virtually every facet of the profession. It can simplify and shorten the oral explanation by the R.P.T. and has been found to generate a lively "question and answer" period after its viewing.

The film is especially valuable for administrators and educators, for viewing by students who might be interested in pursuing a career in Physical Therapy.

Arrangements for booking on loan can be made by writing to Mr. Gustave Bradfeld, Director of Clinical Research, Geriatric Pharmaceutical Corporation, 397 Jericho Turnpike, Floral Park, N. Y. 11001.

## NEW FILM ALERTS MEDICAL ASSISTANTS TO THE PITFALLS IN MEDICAL OFFICES

Wyeth Laboratories of Philadelphia has produced a new motion picture, "Case in Point," to dramatize the "do's" and "don't's" for the medical assistant while receiving and caring for patients in her physician-employer's office.

Designed primarily to avoid malpractice suits, the film is subtitled "Medico-Legal Responsibilities of the Medical Assistant." In enactments of the "right and wrong way," it deals with such problems as handling emergencies when the physician is away, medication errors, first-aid problems, missing and stolen prescription blanks, and confidential information. The producers recommend the picture for both physicians and their staffs and suggests scheduling it for a "boss's night" program. It is 25 minutes, 16mm, in sound and color, and available on free loan from Wyeth Film Library, Box 8299, Philadelphia, Pennsylvania 19101. "Case in Point" was premiered in October, 1969, at the Honolulu Annual Convention of the American Association of Medical Assistants.

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Secretary of Health, Education and Welfare Richardson announced HEW's endorsement of the "Uniform Alcoholism and Intoxication Treatment Act" recently developed by the National Conference of Commissioners on Uniform State Laws, and recommended that the Uniform Act be passed by all states.

Adoption of the act would make it a state policy that alcoholics and intoxicated persons may not be subjected to criminal prosecution because of their consumption of alcoholic beverages, instead requiring that such individuals be provided appropriate treatment for their alcohol problems. The Uniform Alcoholism and Intoxication Treatment Act stipulates that a Division of Alcoholism be established within the state health or mental health department to take responsibility for making services available to alcoholic persons. Under the act, individuals would receive necessary emergency medical treatment and follow-up care involving medical, psychological and social services, rather than be detained on criminal charges.

Enactment of the act by a state would not change the state's existing laws pertaining to driving under the influence of alcohol.



# Woman's Auxiliary

## *... Auxiliary Annie Meets the Geese That Lay the Golden Propaganda*

Sometime in the past Annie was told that in order to have the proper goose "you gotta have the propaganda." And when it comes to getting the proper geese for our regional workshops in Manhattan, Hays, Dodge City, Chanute and Wichita, our Auxiliary gals really come through.

State president Jean Pierce, Topeka, chaired all the meetings and told the women about the Chicago fall conference. She and our two workshop chairmen Katie Pyle, Topeka, and Phoebe Godwin, Lawrence, really knew what they were doing when they chose both the geese and the propaganda for the five workshop sessions.

Our geese didn't lay any eggs, golden or otherwise, in presenting Auxiliary business, but they came through with ideas that were pure gold for county members to use.

When membership chairman Anita Yoder, Denton, went into her act, even the most disinterested member listened. Her enthusiasm was so infectious that it wouldn't surprise Annie if we really came up with all the lagging non-members. Anita used a variety of visual aids and posters. Starting with the idea that she wanted to make membership the "biggest thing she could think of," Anita held up a picture of an elephant. Then she let them have it with the reasons for belonging, ways to go about asking non-members to join, and then a recipe to keep them interested and involved. Members-at-large could be kept active with a list of things they could do individually.

Jackie Burnett, Halstead, led us through the maze of Medcredit and "Teddycare" legislation until even the most dullwitted of us could understand what the various bills mean and why the Medcredit bill is the preferred plan. Even Annie can (and does) explain it to people now! That in itself is a major victory for Jackie.

Our fast-talking AMA-ERF drummer, Jean Cavanaugh, Great Bend, carried her carload . . . and we do mean boxes and boxes . . . of gift items to each meeting. The Chanute workshop was so far from her home base that she took a private plane and arrived box and barrel to sell her supply of watches, small gift items, bubble umbrellas and Jamaican imports. "Mother Rabbit" Jean explained the "rabbit plan" of watching AMA-ERF dollars multiply like rabbits when it is put into student loans. She told us that 216 students at the University of Kansas Medical

Center have applied for more than \$234,000 in loans this year because of the cutback in government funds. That makes our efforts doubly important.

The International Health chairman was almost as loaded down. Dee Cauble, Wichita, brought her tableful of "things we can do from materials that other people throw away." Explaining the enormous need for these items, she encouraged participation in at least a few of the many IHA projects. A week later Dr. Jim Turpin told people attending the Project Concern workshop in Wichita not to think of the little dolls, exercise balls for arthritics, sleeping mats from bread wrappers, and slippers from old nylon hose as being insignificant. He said there is a definite need and appreciation for all of these and other items made from "left overs," as well as for medicines and medical equipment.

Health Manpower chairman Dot Meyer, Wichita, also had an outstanding program. She explained about the health careers bus that is in the process of being established. But I'll tell you all about it another time. It's a super-special thing.

All of the foregoing people attended the five regions. Each region could also request three or four other chairmen to come, depending upon their local needs. Several asked for Community Health information, and Helen Cherner, Hays, had a beautiful "soft sell" of things everyone could do easily. Kaye Atkin, Yates Center, followed her up with "free and easy" ideas for children and youth projects. Three regions asked for editorial information and Annie gave her little spiel on the importance of communication, and how to go about it. Safety was presented by Diane Sanders, Lawrence. She accented the desirability of the free drivers' refresher course from the Kansas State Highway Safety Department and a child safety program. "WASAMA Mama" Jo Lovett, Wichita, also helped out.

It was a good month's work. We were tired when it was over but we think it paid off in informed and interested members, who will, we hope, go out and snag the ones who should be members and aren't. Which reminds me . . . IFYOURWIFEISN'TAMEMBERSHEOUGHTTABE . . . IFYOURWIFEISN'TAMEMBER ask her to join, will you?

Yours for lotsa new goslings to help us cook the Health Care goose. . . .

Annie

# The Kansas Medical Society—1971-1972

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# Pericardial Effusion

## *Changes in Postirradiation Cardiac Silhouette*

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RECENT EXPERIENCE with the increasing application of super-voltage radiotherapy to the mediastinal structures for primary as well as metastatic tumors has shown that occasionally pericardial and cardiac damage may result with unpredictable frequency. The frequency of such complications is often dependent upon the dosage of radiation and the time that has elapsed since the therapy.<sup>1</sup> With rapid improvements in the technique and flexibility of the use of this indispensable armamentarium for a variety of lesions and the longer survivals expected, the frequency and nature of late complications should be of interest to the clinician and radiotherapist.

Pulmonary, mediastinal, esophageal, soft tissue, and bony tumors of the chest wall are successfully palliated with adequate radiotherapy for variable periods of survival or symptomatic relief. Although the level of diagnostic accuracy in pericardial effusion or constrictive pericarditis is high, utilizing the clinical findings and x-ray evidence, the following two cases stress some of the fallacies of changes in cardiac shadow after irradiation, and of pericardiocentesis as a diagnostic and therapeutic measure.

### Case Report

*Case I.* P.C.H., a 45-year-old male, was admitted to the Veterans Administration Hospital on October 27, 1969 with the history of an unresectable malignant thymoma treated with a course of 3,000 roentgen units of high voltage radiotherapy elsewhere in August 1969 (*Figure 1*). Since early October, 1969 this

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**Pericarditis with effusion following radiotherapy to the precordium may be inseparable from secondary tumor spread to the heart and pericardium, despite the availability of various investigations. Since the outlook with these two entities is significantly different, exploration is often warranted to exclude the relatively benign effusion and constrictive pericarditis. Clinical experience with two patients is reported.**

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patient was treated with salicylates, corticosteroids, digitalis, and diuretics, with the suspicion of radiation-induced pericardial effusion and impending cardiac tamponade. The patient had marked ascites, liver failure, pedal edema, high venous pressure,

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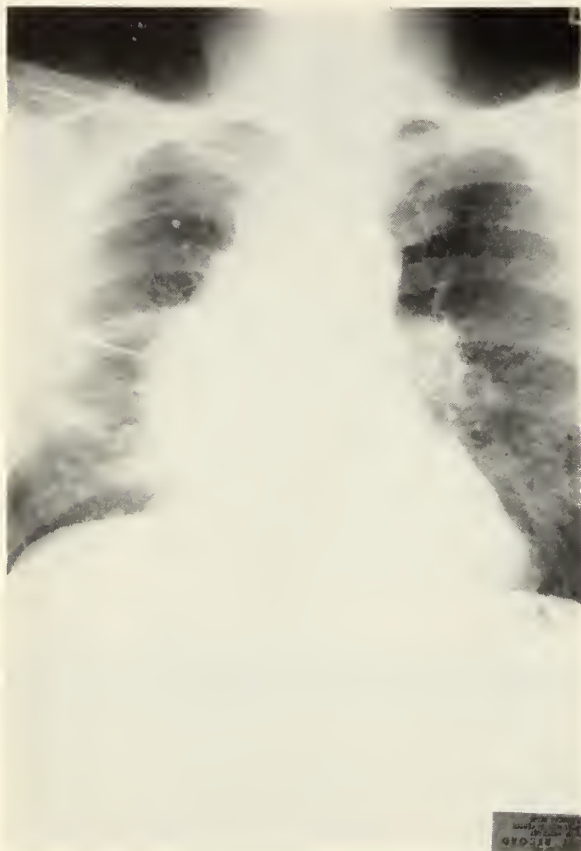


Figure 1. Chest x-ray on initial admission showing a large mediastinal mass, found to be unresectable malignant thymoma (Case I).

and prolonged circulation time. On auscultation, the heart sounds were distant, with tachycardia varying from 124 to 160 per minute, blood pressure 80/60 millimeters of mercury.

Two days before admission to the Veterans Administration Hospital, this patient underwent pericardiocentesis elsewhere; 800 cubic centimeters of clear serous fluid was removed with little change in the cardiovascular hemodynamics or x-ray findings. The EKG showed low voltage, ST segment elevation, and right axis deviation. Recent chest x-rays showed regression in the size of the primary tumor, but marked changes in the size and configuration of the heart (Figure 2). On four different occasions, pericardiocentesis was attempted by different members of the staff and no fluid was obtained from the pericardial cavity.

On November 3, 1969 a small anterior thoracotomy was made on the left side with the hope of improving the patient's acute cardiorespiratory distress. A solid tumor mass was found to replace the entire pericardium and invade the myocardium, which made a pericardiectomy not feasible technically. A biopsy confirmed the diagnosis of malignant thymoma. The

patient suddenly expired a week later and an autopsy examination was not permitted.

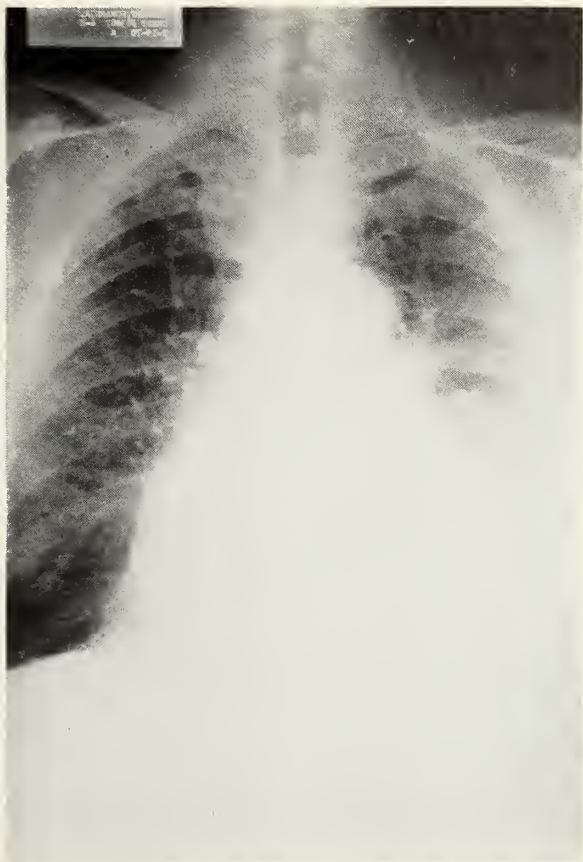
*Case II.* H.A.G., a 64-year-old male patient, was admitted to the Veterans Administration Hospital on February 16, 1970 in acute cardiorespiratory distress. The patient on examination had marked engorgement of the peripheral veins, ascites, edema of lower extremities, and a large palpable liver. Pulse rate was 104 per minute and blood pressure was 100/84 millimeters of mercury. Breath sounds were decreased on bases of both lungs, and heart sounds were barely audible. His past history revealed that five months earlier, he was treated elsewhere with 4,000 roentgen units of cobalt<sup>60</sup> therapy for a carcinoma of the left main stem bronchus with extension to the carina (Figure 3).

Pericardial aspiration was carried out by the infra-xiphoid route on four separate occasions with a total yield of 2,100 milliliters of blood tinged and cloudy fluid. Electrocardiogram showed findings consistent with pericarditis in addition to sinus tachycardia and occasional premature contractions. On February 25, 1970 a left anterolateral thoracotomy was made to create a pericardial window. The entire pericardium was thickened and the pericardial cavity was filled with friable necrotic material in addition to hemor-



Figure 2. Chest x-ray prior to the attempted pericardiectomy showing regression in the size of the primary tumor, but marked increase in cardiac shadow (Case I).





*Figure 3.* Chest x-ray showing marked cardiomegaly in association with clinical findings of pericardial tamponade in Case II. Pericardicentesis prior to surgical treatment yielded a total of 2,100 milliliters of blood tinged fluid.

rhagic fluid. Most of the anterolateral portion of his pericardium was removed with prompt drop in the patient's central venous pressure. Postoperative course of this patient was complicated by wound infection and recurrent pleural effusion on the left. Although this patient required digitalis and diuretics postoperatively, his general condition improved significantly and he was dismissed from the hospital one month following the operation (*Figure 4*).

Two months later, this patient returned to the hospital markedly emaciated and in terminal state. Chest x-rays at this time showed the entire left hemithorax and mediastinum opacified by a homogenous density probably due to a combination of tumor and fluid. Bronchoscopic examination showed that there was a narrow friable area in the left main stem bronchus. Two weeks after this admission the patient expired and no autopsy was obtained.

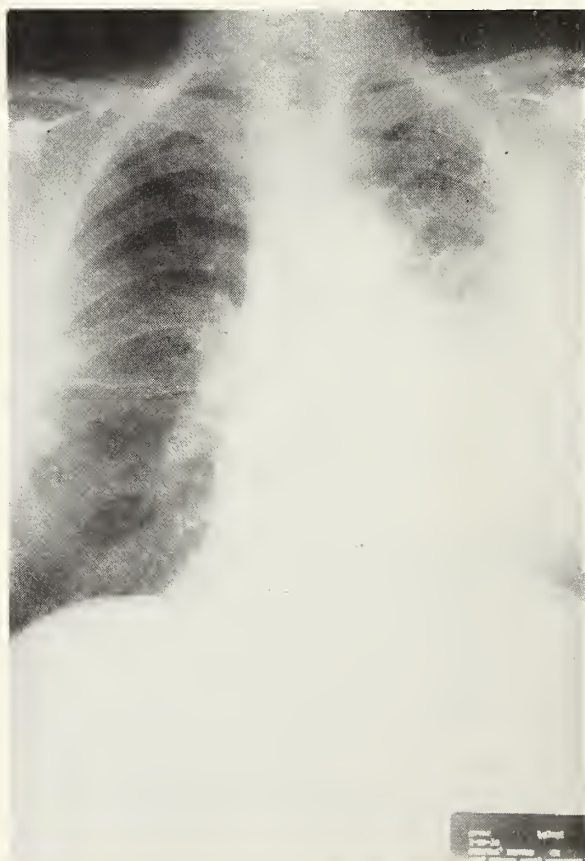
## Discussion

A majority of the patients with secondary tumor invasion of the heart and pericardium are not diag-

nosed until autopsy or exploratory procedures.<sup>2-4</sup> A significant number of such patients, however, may manifest crippling impairment of cardiac function. Thurber and associates estimated that effusion, mechanical constriction of the chambers and great vessels, encroachment on coronary flow, valvular insufficiency or interruption of innervation and conduction are the frequent pathological effects of tumor involvement.<sup>1-3</sup> Among their 189 patients with necropsy evidence of tumor invasion into the heart and pericardium, only 29 per cent were symptomatic prior to death; in most of the latter group, the diagnosis was not even suspected. Breast and lung tumors were responsible for 46 per cent of all the cases of tumor extension, while lymphomas were the cause in 28 per cent of the remaining patients.<sup>4</sup>

Although a number of theories have been put forth regarding the exact mechanism of pericardial and myocardial damage with radiation, the exact mechanism is still obscure. Hyalinization of the myocardial fibers, with a loss of striations and shrinkage of nuclei, could be seen on microscopic evaluation. Arteriolar and capillary walls may also show changes.<sup>5</sup>

The clinical significance of distinguishing between



*Figure 4.* Postoperative chest x-ray (Case II) showing marked decrease in cardiac size was associated with clinical improvement.

the secondary tumor spread and the complications of irradiation is immense. When the primary tumor is controlled or eradicated with no distant metastases, the patients with only pericardial effusion or constrictive pericarditis can be adequately palliated for several months or years, by removing an imminent cardiac embarrassment. Salicylates, corticosteroids, needle aspiration of the pericardium, creation of a pericardial window with pleural drainage, and pericardiectomy are the common therapeutic measures applied successfully. In sharp contradistinction, tumor invasion of the heart and pericardium throws a dismal outlook on almost all the patients. If pericardiocentesis yielded little or no fluid, the diagnosis of tumor extension may be confirmed by an extrapleural mediastinal approach under local anesthesia in poor risk patients.<sup>8, 9</sup>

The clinical, roentgenographic, electrocardiographic, and hemodynamic changes are usually identical in effusion and tumor invasion of the pericardium.<sup>6, 7</sup> In questionable cases, despite the repeated failures to aspirate fluid out of the pericardial cavity, an exploration of the pericardial cavity is warranted. During infra-xiphoid pericardiocentesis in patients with marked ascites, unrecognized aspiration of ascitic fluid may offer a false sense of security. Preoperative distinction of the constrictive action of epicardial tumor extension from simple postirradiation pericarditis may be an expensive, time consuming, cumbersome and often disappointing adventure. Cardiac scan with simultaneous lung scan, selective coronary arteriogram, cineangiocardigram, carbon dioxide opacification of the right atrial margin, diagnostic pneumomediastinum, and cardiac catheterization are a few of the many available steps in addition to routine x-rays and physical examination.

DeLoach and Haynes, after an extensive review of the problem of secondary tumors of the heart and report of 137 patients of their own, concluded that the development of congestive failure, which is refractive to accepted forms of therapy in a patient with signs of constrictive pericarditis or signs of pericardial effusion, and a history of an earlier neoplastic process, should arouse suspicion of tumor invasion.<sup>3</sup> The complexity of diagnosis and the institution of specific therapy may be increased when constrictive pericarditis and effusion coexist in the same patient.<sup>1</sup> During thoracotomy an attempt should be made to remove as much of the tumor-laden pericardium anterior to the phrenic nerves as is technically feasible. This may palliate them at least temporarily, particularly in locally invasive tumors.

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# Tardy Ulnar Palsy

## *A Review of 62 Cases and Discussion of Current Concepts*

STEPHEN GOLDWARE, M.D. and JOHN A. MAXWELL, M.D.,

*Kansas City, Kansas\**

### Clinical Material

FIFTY-SEVEN PATIENTS (five with bilateral disease) were treated for tardy ulnar palsy at the University of Kansas Medical Center and Veterans Administration Hospital, Kansas City, Missouri in the ten years prior to February, 1971. Over one-half were between 40 and 60 years of age. The duration of symptoms ranged from ten days to six years, but most had been affected 3-12 months. Seventeen recalled trauma to the affected elbow; 23 patients denied trauma, and general evaluation uncovered no related disease. Seven had onset at or after an unrelated hospitalization, five patients had diabetes mellitus, four were elbow-leaners, and one had ulnar bursitis (*Table 1*).

Paresthesia, weakness, atrophy, and decreased sensation in the ulnar distribution were present in most patients. Flexor carpi ulnaris was rarely involved. Less frequent signs included a positive Tinel's sign at the elbow, a hypermobile nerve, a mass compressing the nerve, x-ray evidence of osteoarthritis in the elbow joint, and cubitus valgus deformity (*Table 2*).

Motor nerve conduction velocity was slowed across the elbow in 35 of 36 patients tested. Eighteen of 26 patients studied had neuropathic electromyogram patterns.

### Surgical Findings and Treatment

At operation 29 of 62 nerves were tightly bound by a condensation of fibrous tissue at the cubital tunnel bounded by the aponeuroses of the ulnar and humeral heads of flexor carpi ulnaris superficially, and by the medial ligaments of the elbow joint deeply. Just proximal to the constriction the nerves were thickened. Constriction presented in 14 patients who recalled trauma, eight had no disease or trauma, two had arthritis of the elbow joint, two were diabetics, two had diabetes and arthritis, and one occurred after a hospitalization.

In nine cases the nerves were thickened, and three were described as atrophic. Six nerves seemed hyper-

mobile. Masses were found in three instances, compressing the nerve at the entrance to the cubital tunnel; pathologic diagnoses were neuroma, calcified fasciitis, and lipomatous lymph node. Four nerves were grossly normal.

Subcutaneous anterior transposition was done in 41 cases. Eighteen nerves were treated by medial epicondylectomy, accompanied in each case by sufficient neurolysis to assure that any fibrous constriction present has been relieved. Internal neurolysis was not done in any patient. Three patients were managed by simple excision of the compressing mass.

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**Although ulnar nerve damage at the elbow is a common problem, there is little uniformity of opinion on ideal management. Recent reports favoring different operations led us to review our experience.**

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Fifty operations were followed from two months to ten years. These included 13 patients who had medial epicondylectomy, 34 who had subcutaneous transposition, and three who had simple excision of a compressing mass (*Table 3*). The criteria of improvement were: elimination of paresthesia and pain, and useful return of muscle strength and sensation. There were no operative complications.

Overall 35 of 50 patients operated were improved. Seven of 13 patients (54 per cent) managed with medial epicondylectomy improved, while 27 of 34 patients (79 per cent) having anterior transposition benefited. Both of the two followed patients who had simple excision of masses were initially better, but one developed recurrent paresis several months after operation. Most patients who improved had at least partial recovery of all neurologic functions, but two have persistent sensory deficit, one had return of sensation only, and two were benefited only by pain relief and obtained no return of neurologic function.

Operative findings seemed the most important factor in prognosis. Twenty-one cases of fibrous constriction with proximal thickening of the nerves were

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TABLE 1  
CLINICAL HISTORIES IN PATIENTS  
WITH TARDY ULNAR PALSY

No associated trauma or disease .....	23
Remote blunt trauma without fracture .....	8
Occurred at or after prior hospitalization .....	7
Old fracture or dislocation at elbow .....	7
Diabetes mellitus .....	5
Elbow leaner .....	4
Remote penetrating wound .....	2
Ulnar bursitis (old) .....	1

TABLE 2  
PHYSICAL SIGNS IN 62 OPERATED NERVES

Paresthesia in hand .....	55
Decreased sensation .....	55
Weakness .....	53
Atrophy .....	46
Tinel's sign .....	21
Pain in hand .....	16
Hypermobility nerve .....	6
Mass lesion .....	3
Osteoarthritis of elbow on x-ray .....	2
Cubitus valgus .....	1

followed, and of these 20 improved after operation. In contrast, only four of eight patients whose nerves were thickened but not constricted made progress.

Thirteen patients were not benefited by operation. Four of this group had developed symptoms during, or shortly after hospitalization for other reasons. Two had remote trauma, three had no predisposing circumstances, two were elbow-leaners, and one had severe arteriosclerosis obliterans of the upper extremities. One patient who related a history of remote trauma subsequently manifested a neuropathy of the entire brachial plexus; another who was thought to have no predisposing cause died nine months after operation of widespread adenocarcinoma, having later manifested signs of polyneuropathy. In 12 of these failures the motor nerve conduction velocity had been decreased at the elbow. At operation, four nerves were thickened, three were atrophic, one was hypermobile, two were normal, two were not recorded, and one had fibrous constriction.

### Discussion

Operations for the amelioration of ulnar palsy vary with the author's concept of pathogenesis.

Feindel and Stratford<sup>4, 5</sup> and Osborne<sup>10</sup> emphasized the frequency of actual constriction of the ulnar nerve at the elbow. Paine<sup>11</sup> confirmed this hypothesis in a recent review, citing restoration of function in 41 of 54 patients with tardy ulnar palsy who were treated by incision of the aponeurosis of flexor carpi ulnaris, simply decompressing the ulnar nerve.

Our results utilizing medial epicondylectomy and subcutaneous anterior transposition are no better than those of series employing simple decompression.<sup>4, 5, 10, 11</sup> Of particular interest is the fact that almost half of our patients had fibrous constriction of the ulnar nerve at the elbow verified at operation; 21 of these patients were followed and 20 improved.

Hypermobility of the ulnar nerve may produce tardy ulnar palsy.<sup>1, 3, 7</sup> Gore<sup>7</sup> has recommended medial epicondylectomy for this situation. The results in

TABLE 3  
OPERATIVE FINDINGS AND OPERATIONS IN RELATION TO POSTOPERATIVE PROGRESS  
OF PATIENTS WITH TARDY ULNAR PALSY (THREE PATIENTS WITH MASSES OMITTED)

Operative Findings	Total Number	Medial Epicondylectomy			Transposition		
		TOTAL	FOLLOWED	IMPROVED	TOTAL	FOLLOWED	IMPROVED
Fibrous constriction with proximal thickening .....	29	5	1	1	24	20	19
Thickened nerve only .....	9	3	3	0	6	5	4
Hypermobility nerve .....	6	2	2	1	4	3	3
Unknown .....	7	1	4	3	3	2	1
Normal nerve .....	5	3	2	2	2	2	0
Thin atrophic nerve .....	3	1	1	0	2	2	0
		18	13	7	41	34	27

our group of six hypermobile nerves support the theory of nerve relocation, though anterior transposition seems as useful as medial epicondylectomy.

Orthopedic abnormalities were stressed in the analysis of Gay and Love,<sup>6</sup> who recommended anterior transposition into a muscular bed along with incision of the perineurium. Seventy per cent of their patients improved after operation. Our results with subcutaneous transposition indicate that creation of a muscular bed for the nerve is unnecessary.

Medial epicondylectomy was originally offered by Kind and Morgan<sup>8</sup> for relief of contusion of the ulnar nerve against the medial epicondyle, though they also recognized the frequent occurrence of fibrous constriction at the elbow and specified that the nerve should be thoroughly exposed at the time of medial epicondylectomy. Recently, Neblett and Ehni<sup>9</sup> presented cases of apparent nerve contusion at the elbow improved by medial epicondylectomy done without thorough exposure of the nerve itself. Four of our patients were elbow leaners, but at operation none appeared to have contusion of the nerve against the epicondyle. Feindel and Stratford<sup>4, 5</sup> propose that increased symptoms occur with prolonged flexion of the elbow, because this produces tightening of the aponeurosis of flexor carpi ulnaris and bulging of the medial ligament of the elbow joint, squashing the ulnar nerve in between. Removal of the medial epicondyle does tend to relax the superficial components of the cubital tunnel and this may account for the restoration of function in the cases reported.

Four of our operative failures had nerves which were thickened but not constricted; internal neurolysis may be considered in such cases, as recommended by Brown.<sup>2</sup>

### Summary and Conclusions

Sixty-two cases operated on for tardy ulnar palsy are reviewed. Surgically correctable causes of tardy ulnar palsy include fibrous constriction at the elbow

with proximal thickening, hypermobility of the ulnar nerve, repeated contusion of the ulnar nerve against the medial epicondyle, intraneural adhesions, and mass lesions. Recommended operations for ulnar palsy include anterior transposition, medial epicondylectomy, simple decompression, and internal neurolysis.

In our patients, the most frequent operative finding of ulnar neuropathy at the elbow was fibrous constriction at the cubital tunnel with proximal thickening. From the observed pathology in our patients and the review of current concepts of etiology and management, we suggest that fibrous constriction of the ulnar nerve can be adequately treated by simple decompression although we have no experience with simple decompression. Relocation of the nerve may be reserved for patients who present with subluxing ulnar nerve, elbow deformities, or extensive scarring in the nerve bed.

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# Bedside Cardiac Catheterization

## *Intracavitary Electrocardiographic Method of Pulmonary Artery Catheter Placement*

WAYNE GRAY, M.D., JAMES KING, M.D., and  
HUBERT BELL, M.D., *Kansas City, Kansas\**

THE IMPORTANCE of an accurate means of estimating the left atrial pressure in the acutely ill patient is readily recognized. This pressure can be used to monitor intravenous fluids and to make decisions regarding treatment with diuretics and digitalis. Although commonly used, the central venous pressure is not always a reliable indicator of the left atrial pressure.<sup>1, 2</sup> The Swan-Ganz flow directed balloon catheter has recently provided an easy and reliable method of obtaining a bedside mean pulmonary artery pressure or pulmonary capillary wedge pressure.<sup>3</sup> Both of these pressures correlate very well with the left atrial pressure.<sup>1</sup> More recently the pulmonary artery pressure has been shown to be of value in detecting early left ventricular failure in acute myocardial infarction.<sup>4</sup> Unfortunately, the relatively sophisticated pressure monitoring system required for accurate and consistent catheter placement and pressure recording may preclude its use in many hospitals. The purpose of this report is to describe a simplified method of pulmonary artery catheter placement using electrocardiographic monitoring. Although a similar method has previously been described, reemphasis of this technique seems appropriate at this time.<sup>5</sup>

The following method was utilized in positioning the catheter. A venous cutdown was done in the left antecubital region in the usual manner. The Swan-Ganz catheter was fitted with a metal two-way stopcock and filled with sodium bicarbonate solution containing 44.6 mEq. per 50 milliliters. The catheter was connected to a sterile alligator clip, which was fastened to the metal stopcock. The alligator clip was then attached to the V lead of a standard, adequately grounded electrocardiographic recording machine. The catheter was then advanced and placed in the superior vena cava in the method described by Swan and Ganz.<sup>3</sup> Using intracavitary electrocardiographic monitoring, the catheter was then advanced into the right atrium, right ventricle, and subsequently placed in the pulmonary artery. A mean pulmonary artery pressure was obtained using a standard water ma-

nometer in the manner that a central venous pressure is obtained.<sup>6</sup> Proper positioning of the catheter was then assured by a portable overpenetrated chest film using a supine anteroposterior view.

The technique employed to obtain a mean pulmonary artery pressure with a standard water manometer and electrocardiogram using the Swan-Ganz catheter permits rapid and accurate placement of the catheter into the pulmonary artery. This method can be utilized in any hospital without sophisticated pressure monitoring equipment or fluoroscopy. A

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**The use of intracavitary electrocardiographic monitoring provides a simple technique for bedside pulmonary artery catheter placement. This method can be utilized in any hospital that is presently familiar with central venous pressure monitoring.**

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similar method for temporary transvenous pacemaker placement has been previously described.<sup>7</sup> Figure 1 demonstrates the various intracavitary electrocardiographic morphologies and corresponding pressure recordings obtained in the cardiac catheterization laboratory. The right atrial intracavitary morphology usually demonstrates a large P wave that may even be larger than the corresponding ventricular complex. The P wave is positive, isoelectric or negative, depending upon its position in the right atrium. The ventricular complex in the right atrium is usually a QS, QR, or Qr. The right ventricular intracavitary morphology usually demonstrates a ventricular complex which is larger than the ventricular complex obtained in the right atrium and larger than the right ventricular P wave. The ventricular complex in the right ventricle is usually an rS.<sup>8</sup> The pulmonary artery position produces an even different appearance with a diminution in P wave and ventricular complex amplitude. The appearance of the T wave was not helpful.

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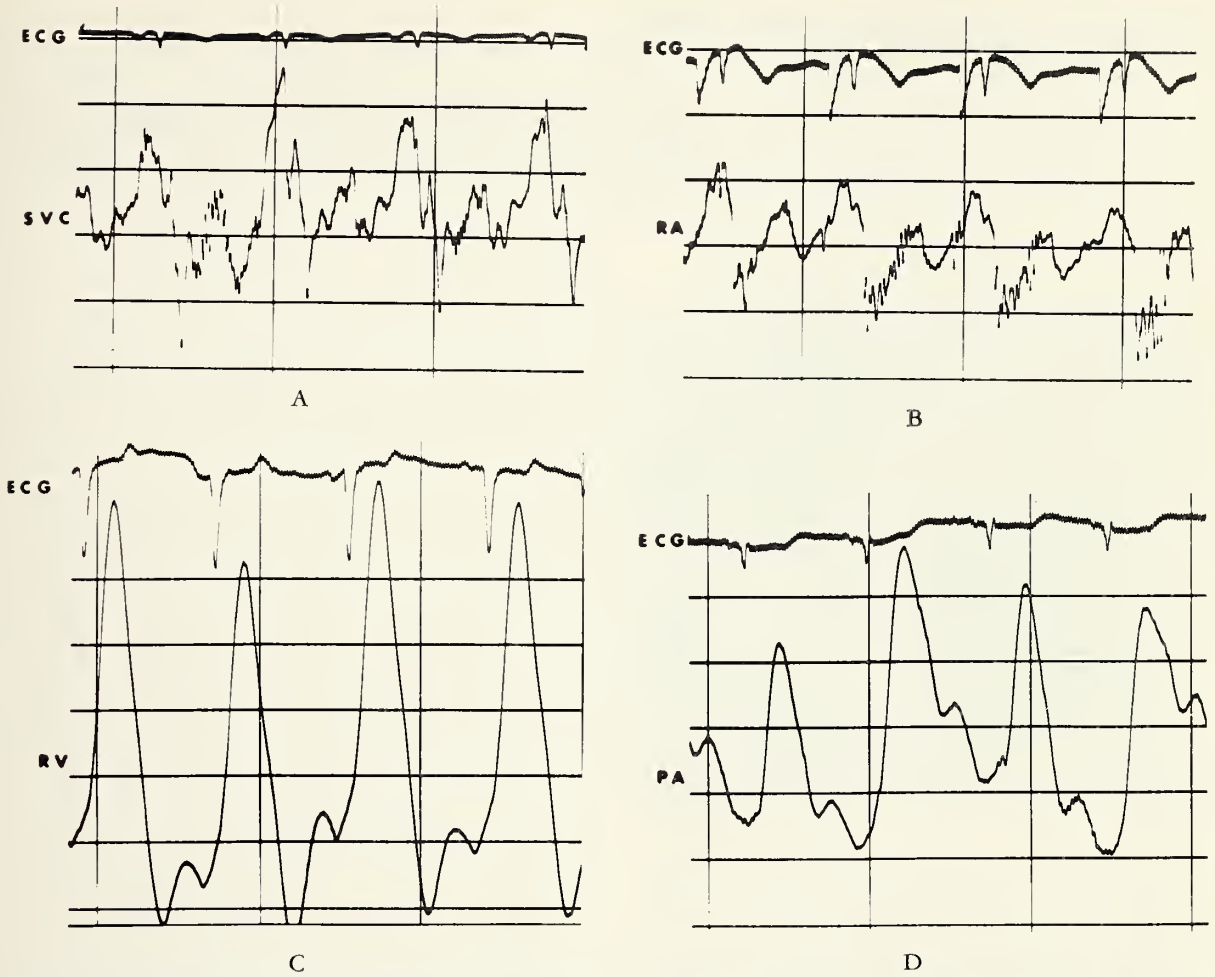


Figure 1. Pressures and corresponding intracavitary electrocardiograms in the a) superior vena cava, b) right atrium, c) right ventricle, and d) pulmonary artery.

The water manometer permits determination of the mean pulmonary artery pressure which correlates very well with the pulmonary capillary wedge pressure or left atrial pressure. This is a much more reliable estimation of the left atrial pressure than the central venous pressure. The normal value for pulmonary artery pressure with this technique is 13 to 27 centimeters of water.<sup>6</sup> If desired, wedge pressure determination can be easily performed once the catheter is in the pulmonary artery by the technique described by Swan and Ganz.<sup>3</sup> Catheter tip position can be verified by a portable overpenetrated chest film as demonstrated in Figure 2.

Thus, the use of intracavitary electrocardiographic monitoring provides a simple technique for bedside pulmonary artery catheter placement. This method can be utilized in any hospital that is presently familiar with central venous pressure monitoring. The mean pulmonary artery pressure obtained provides a reliable indication of the left atrial pressure.

(Continued on page 82)

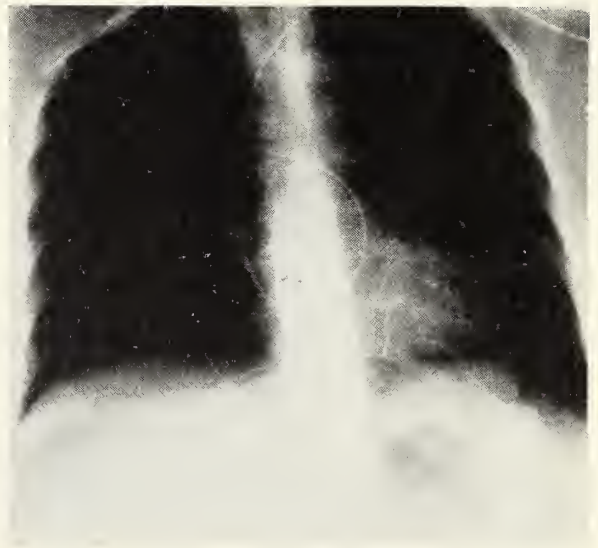


Figure 2. Supine, anteroposterior, overpenetrated chest x-ray demonstrating the position of a catheter in the pulmonary artery.

# Making Childhood Safer

## *Child-Resistant Containers for Prescription Medications: Current Status and Use Survey*

ROGER C. SHENKEL, M.D., *Wichita*

IN KANSAS, just under 1000 ingestions of medication in children under age five years are reported to Poison Control Centers annually.<sup>5</sup> It is estimated that the actual figure would be about eight times this number.<sup>9</sup> The Wichita Poison Control Center (Wesley Medical Center) reported 300 cases in this category during the year 1970. One-third involved aspirin; the remainder included all other types of medications. Nine children required hospitalization.<sup>5</sup>

### Background

Several partial solutions to this problem exist. Parents are encouraged to keep medications out of the reach of children. Medications can be made less attractive in color, odor and taste. Pick-up campaigns attempt to remove old or unused medicines from homes. The most promising solution, however, involves the use of child-resistant containers (CRCs) for tablets, capsules and liquid medication. The pharmaceutical industry has developed special vials that require simultaneous pressure and twist to open. It has been documented that children under age five years cannot open these containers,<sup>4</sup> and that their use will reduce accidental poisonings in this group by 90 per cent.<sup>8</sup> Less than 1 per cent of adult patients cannot open these containers.<sup>1</sup> These vials are suitable for tablets and capsules. For liquid medication, a plastic sleeve has been developed that can be applied to the standard medication bottle. Adequate evaluation of this device is not presently in the literature; but, from personal experience with the sleeve, it is readily apparent that a child would have considerable difficulty opening such a container. The makers of children's aspirin have developed a small-mouthed bottle with a lid similar to that of the vials mentioned above. Their products are currently available in such containers.

CRCs are not expensive. The vials presently available commercially cost 1 cent per vial more than the corresponding vial without the child-resistant device. The safety sleeves for bottles cost about 1 cent each.

Some effort has been made on the national scene to promote CRCs. The Subcommittee on Accidental Poisoning of the American Academy of Pediatrics has stated: "The use of CRCs is urged for all prescrip-

tion tablets and capsules dispensed in amounts potentially toxic to children."<sup>1</sup> The medical branches of the United States Armed Forces and the Public Health Service have been using CRCs for solid medication for the past three years. One gratifying result of this, in a study done at Madigan General Hospital in Tacoma, Washington, was a reduction by 90 per cent of childhood ingestions of prescription tablets and capsules.<sup>7</sup> In the province of Ontario, Canada, the Pharmacy Association has declared that all prescription items will be dispensed in CRCs.<sup>3</sup> Childhood poisonings there have decreased by 90 per cent.<sup>9</sup> One large drug store chain in the United States has begun using CRCs exclusively.<sup>4</sup> The Poison

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**Accidental childhood poisonings continue to be a problem in the United States. There are approximately one million accidental poisonings yearly in this country, and 95 per cent of these occur in children under the age of five years. In 1968, 284 children died as a result. Medications are the agents in half of the poisonings.**

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Prevention Packaging Act of 1970 (Public Law 91-601) permits the Food and Drug Administration to require safety containers. To this date, the F.D.A. has not done so in the area of medications; however, it has proposed such regulations for aspirin and drugs with a potential for abuse (controlled drugs).

The American Pharmaceutical Association is not yet endorsing CRCs. The Association feels there are certain theoretical legal problems until it is proven that the containers satisfy federal standards for a "tight" container.<sup>7</sup> This reluctance is difficult to understand in view of the fact that the federal government (the F.D.A. and the military) appears to be the foremost proponent of CRCs.

### Data

In October of 1971, the pharmacies of Wichita, Kansas, were surveyed to determine to what extent CRCs were being utilized. Of the city's 47 pharma-



cies, five (11 per cent) had CRCs (vials only) available. Only three (6 per cent) were using them. The Air Force base pharmacy has used CRCs for three years for all tablets and capsules. One private pharmacy used vials at the request of a single physician for only his patients. Another private pharmacy used the vials for "particularly toxic" prescriptions.

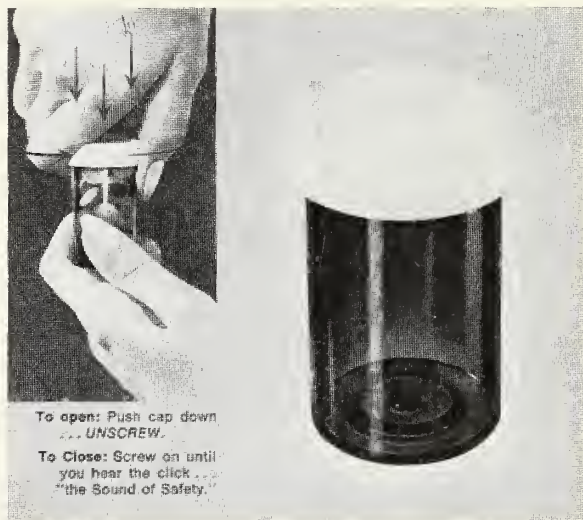
Of the 47 pharmacies, 45 were agreeable to using the CRCs should the demand arise (they were being queried by a physician). Only one physician in the city was known to have requested CRCs. No customers had requested CRCs. Several of the pharmacists were unaware that the containers were not expensive. Few realized that all military pharmacies are using CRCs. Several held the misconception that the containers are intended for pediatric prescriptions only, rather than for all prescription items.

Some doubts about CRCs were voiced by the pharmacists. There would be a problem of shelf space to stock additional types of vials. There would be an additional expense. The military base pharmacists mentioned that customers complained about CRCs on occasion and that working with large numbers of CRCs was sometimes irritating to their hands (the safety device has a sharp corner). Several voiced concern over the fact that the CRCs are not uniformly moisture proof. But the pharmacists who were aware of the frequency of accidental ingestions uniformly agreed that there were no real obstacles to the use of CRCs at the present.



The lack of awareness among pharmacists of the value and availability of CRCs came as a surprise to the author. For this reason, physicians were questioned informally as to their knowledge of CRCs. The available products were shown to them. All pediatricians were aware the containers existed; some had never seen the items. Among other physicians,

most had heard of CRCs, few had seen them, and few realized they were currently available. Few realized that they were already being used on a large scale by the military. Several physicians held the misconception that CRCs are intended for pediatric prescriptions only. The physicians questioned were less aware of the value and availability of CRCs than were the pharmacists.



## Proposal

There are several methods by which CRCs can become available to patients. The pharmaceutical and medical organizations can institute general use of the containers such as was done in Ontario, Canada. This could result in all prescription tablets and capsules being dispensed in CRCs. Probably this could soon be extended to liquid medications.

Another method would involve the individual physician specifying on prescriptions that they be filled in CRCs, or requesting of pharmacies that all prescriptions be so filled.

The public could be approached directly with educational material so they could request CRCs. An educational campaign should be part of any program in order to facilitate public acceptance of CRCs.

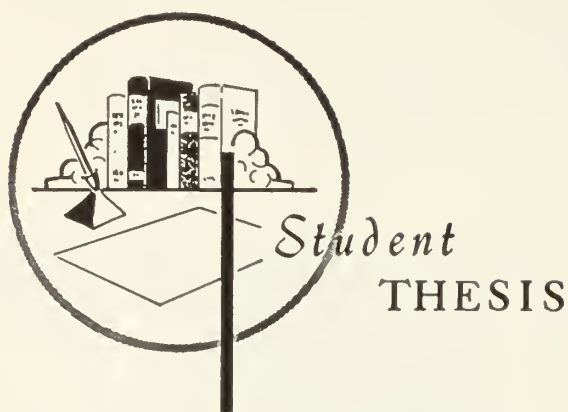
The other alternative involves direct federal regulation. Probably the F.D.A. will eventually require CRCs.

## Conclusion

Accidental poisonings with prescription medications in children remain a substantial problem. Excellent child-resistant containers (CRCs) for tablets and capsules are available now at an additional cost of 1 cent per vial. Safety devices for liquid medications are available and appear to be equally accept-

*(Continued on page 72)*





## *Hodgkin's Disease: A Clinical Study of 141 Patients*

JOHN FORMAN, M.D.,\* *Los Angeles, California*

SINCE THOMAS HODGKIN presented his paper in 1832 on "Some Morbid Appearances of the Absorbent Glands and Spleen," much literature has been published on the disease. It may be stated that a large volume of material written on a subject is an indication that everything is known about it, or that very little is known. With regard to several aspects of Hodgkin's Disease, the latter may apply. However, great strides have been made in recent years and the disease in early stages is associated with long survival, and is even curable.<sup>21</sup>

The natural history, modes of therapy, and survival in Hodgkin's Disease have been reported recently in several excellent reviews.<sup>25, 43, 46</sup> The purpose of this paper, therefore, is not to attempt to review all of the parameters of the disease, but rather to present a clinical study of 141 patients seen at the University of Kansas Medical Center. A brief review of the literature as to current concepts will also be included.

The present study is retrospective in nature and is liable to all the pitfalls of this type of study. The data in retrospective studies can and often is arranged in a way to prove an author's concept of the disease. With the many variables in Hodgkin's Dis-

ease, such as incidence, histology, staging, prognosis and their relationships, almost any conclusion can be made. Nevertheless, reports from different centers as to their experience in treating patients with Hodgkin's Disease are extremely helpful in adding to the total knowledge of this disease.

### **Methods and Materials**

From 1965-1969, 141 charts were reviewed on patients with Hodgkin's Disease seen at the University of Kansas Medical Center. Many of these patients were initially seen and treated outside of the Medical Center and were later referred here for treatment of recurrence of disease. For these patients to be included in this study, each had to have biopsy-proven disease with characteristic Reed-Sternberg cells. Information on age and sex incidence, histology, clinical staging, type of therapy, and length of survival was accumulated.

Histology as reported by the Department of Pathology was primarily under two classifications. Early in this period the biopsy specimens were classified under the Jackson-Parker classification of paraganuloma, granuloma, and sarcoma. More recently, the classification of Lukes modified by the Rye Conference was employed: lymphocyte rich, nodular sclerosing, mixed cellular, and lymphocyte depletion.<sup>33</sup> A comparison of these two classifications is shown in Table 1. No effort was made to review all the slides to place them under one classification, but they will be reported in the two separate groups. The patho-

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This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Forman is now serving his internship at the Hospital of the Good Samaritan, Los Angeles.

TABLE 1

1947 (Jackson and Parker)	→	1963 (Lukes)
1. Paragranuloma	→	1. Lymphocytic predominance
2. Granuloma	→	2. Nodular sclerosis
	→	3. Mixed type
3. Sarcoma	→	4. Lymphocytic depletion

From Rosenbaum.<sup>42</sup>

logic description of sarcoma and lymphocyte depleted groups were almost identical. Therefore, the sarcoma group is reported as lymphocyte depleted. Many slides and reports were not available for study, since these patients were diagnosed and treated elsewhere and were followed up later at KUMC. Some patients were lost to followup after initial diagnosis.

Staging was recorded only in the live patients and represents their clinical stage at last followup. The staging was done primarily according to the criterion of the Rye Conference (Table 2). Means utilized in staging were clinical evaluation, lymph node biopsy, bone marrow aspiration or biopsy, and chest x-ray. Blood studies included a complete blood count, platelet count, liver function studies, and others when indicated. Lymphangiography, intravenous pyelography, inferior venacavagrams, liver and spleen scans, as well as percutaneous liver biopsy were employed in many cases. A few patients underwent exploratory laparotomy, splenectomy with lymph node and liver biopsy as recommended by recent studies.<sup>7, 11, 16, 30</sup>

TABLE 2

## Stage

- I Disease limited to 1 anatomic region or to 2 contiguous anatomic regions on the same side of the diaphragm.
- II Disease in more than 2 anatomic regions or in 2 non-contiguous regions on the same side of the diaphragm.
- III Disease on both sides of the diaphragm but not extending beyond the involvement of the lymph nodes, spleen, or Waldeyer's ring.
- IV Involvement of the bone marrow, lung parenchyma, pleura, liver, bone, skin, kidneys, GI tract or any tissue in addition to lymph nodes, spleen, or Waldeyer's ring.

All stages subclassified A (absent) or B (present) as to whether systemic symptoms exist (night sweats, fever, pruritus).

Rye Conference (1966).<sup>45</sup>

TABLE 3  
AGE INCIDENCE

Age in Years	Dead	Alive	Total
0-10 .....	1	3	4
11-20 .....	9	21	30
21-30 .....	11	18	29
31-40 .....	10	10	20
41-50 .....	8	8	16
51-60 .....	8	8	16
61-70 .....	11	4	15
71-80 .....	8	0	8
Over 80 .....	2	0	2

The means of treatment varied because of the uncontrolled retrospective nature of this study. Since 1965, most of the patients treated at KUMC received extended field irradiation in either the "mantle" field or inverted Y, depending on the site of involvement. This was done primarily on patients with stages I and II disease, and in selected cases of stage III disease. Some patients were given only local irradiation. The tumor dose averaged approximately 4000 rads and was given over a four to six week period. Megavoltage therapy with a cobalt 60 teletherapy unit was used in most cases. Many patients were treated outside the medical center and their therapy will be referred to only when appropriate.

Length of survival included the time from the first histological diagnosis until the last followup. Many of the patients were lost to followup at the Medical Center. However, recent information was furnished on these patients through the KUMC Tumor Registry, which follows these patients by correspondence with the local physician involved. Of the 69 patients who died, the autopsy reports were available on 16. The cause of death in these patients is summarized in Table 8.

TABLE 4  
SEX INCIDENCE

	Dead		Alive		Total	
	NO.	PER CENT	NO.	PER CENT	NO.	PER CENT
Females .....	27	39.3	27	37.6	54	38.4
Males .....	42	60.7	45	62.4	87	61.6
Total .....	69		72		141	

## Results

Of the 141 patients studied, 72 are alive and 69 are dead. The mean age incidence for all patients at time of diagnosis is 37.9 years. *Table 3* summarizes the age incidence with regard to patients both living and dead. The second and third decade were the age groups with the highest incidence. The range was from 4-85 years of age, with a median of 40.5 years. *Table 4* summarizes the sex distribution of living and

dead patients. There were 87 males and 54 females, which indicates a male preponderance of approximately 3:2. This information is similar to that reported at this institution for a longer period of time (1944-1969),<sup>14</sup> as well as in other series.<sup>33, 35</sup>

A total of 92 patients had available histological reports. Sixty-six were classified according to the Rye Conference. There were 15 with lymphocyte rich, 24 with nodular sclerosis, 14 with mixed cell, and 13 with lymphocyte depleted cell types. Twenty-six were classified according to Jackson and Parker. Three were paraganuloma and 23 were granuloma cell types. It is significant that all patients with lymphocyte depleted types are dead. *Table 5* summarizes the histology with regard to sex and stage distribution. Of the 72 patients presently alive only 66 were staged. The stage distribution and their survival time is recorded in *Table 6*.

TABLE 5  
HISTOLOGY AS CORRELATED WITH SEX,  
STAGE, AND PRESENCE OF DISEASE  
IN 52 LIVE PATIENTS

Type	No.	Stage	Disease Present
Lymphocytic rich	10	I A—4	0
Males	8	B—0	—
Females	2	II A—4	0
		B—1	+
		III A—0	—
		B—1	+
		IV —0	—
Total			2
Nodular Sclerosis	19	I A—2	0
Males	5	B—0	—
Females	14	II A—9	0
		B—1	0
		III A—1	0
		B—3	++
		IV A—0	—
		B—3	+++
Total			5
Mixed Type	11	I A—3	0
Males	8	B—0	—
Females	3	II A—1	0
		B—3	0
		III A—0	—
		B—1	+
		IV A—2	++
		B—1	+
Total			4
Lymphocyte poor	0	—	—
Paraganuloma	2	II A—1	0
Males	2	III B—1	+
Total			1
Granuloma	10	I A—1	0
Males	8	B—0	—
Females	2	II A—4	0
		B—0	—
		III A—2	0
		B—1	0
		IV A—0	—
		B—2	++
Total			2

TABLE 6  
STAGE DISTRIBUTION

Stage	No.	Survival in Years				
		1	2	3	4	5
I A . . . . .	13	3	3	3	2	2
B . . . . .	0	—	—	—	—	—
II A . . . . .	22	9	7	2	4	0
B . . . . .	4	2	2	0	0	0
III A . . . . .	3	0	0	1	2	0
B . . . . .	8	2	4	1	1	0
IV A . . . . .	22	1	0	1	0	0
B . . . . .	14	3	1	3	1	6

Survival results were set up in the following ways: 1) total overall survival, 2) histology, 3) correlated with type of therapy. These results are summarized in *Figures 1-3*, and *Table 7* respectively. All survival graphs are based on the actuarial method<sup>51</sup> or per cent of all patients alive from time of biopsy diagnosis to present time (Jan.-March, 1971). *Figure 1* shows all 141 patients and their distribution along the actuarial survival curve. Most patients lie along the early part of the curve because they were only recently diagnosed and not enough time has elapsed to see if they will have recurrence of their disease. The range of survival was from less than one month to 18 years. These patients living this long (18 years) were diagnosed and treated elsewhere, but came to KUMC during 1965 to 1969 for followup therapy.

Survival as correlated with histology (*Figures 2, 3*) shows the following four to six year survival results: lymphocyte rich, 74 per cent; nodular sclerosing, 80 per cent; mixed cellular, 78 per cent; and lympho-



TABLE 7

STAGE AS CORRELATED WITH THERAPY TYPE, RECURRENCE RATE, AND SURVIVAL

Stage I	No.	Recurrences		%
		Ave. Time Without MONTHS	NO.	
Local	2	126	1*	50
Ext. field	10	33.5	0	0
Other (surg.)	1	68	0	0
Stage II				
Local	0	—	—	—
Ext. field	25†	27	0	0
Other (chemotherapy)	1	26	0	0
Stage III				
Stage III	No.	Ave. Surv. MONTHS	Recurrences	
			NO.	%
Local	3‡	38.3	3§	100
Ext. field	6‡	31.6	2	33.3
Other (chemo- therapy only)	2	32.5	1	50

\* This patient is alive 18 years following local irradiation initially and then repeat irradiation for a recurrence. She is now without evidence of disease.

† Two of these patients also had one dose of chemotherapy.

‡ Some of these patients also received chemotherapy in addition to irradiation.

§ Two of these patients are without evidence of disease at present.

cyte depleted, 0 per cent. These results show a higher survival for nodular sclerosing and mixed cellular because there is a large number in these groups who were recently diagnosed. With regard to paraganuloma, the survival was 68 per cent, while the granuloma group had 42.6 per cent alive at five years (Figure 3). Table 7 records only the live patients and shows the excellent response to extended field irradiation as compared to local irradiation. The long term survival in one patient with surgery only, and one patient with chemotherapy may show the variability of the disease.

## Discussion

Hodgkin's Disease is a disease of the reticulo-endothelial system which affects both sexes and all ages. The present study shows a high incidence in the second, third, and fourth decades of life. Table 3 also shows that the disease affects older patients more severely, and very few patients over 60 are alive. MacMahon found a much better survival rate in patients under 50 years of age.<sup>33</sup> The sex incidence as shown

in Table 4 shows the male preponderance of 3:2 with approximately the same number alive as dead.

The etiology of Hodgkin's Disease is not known. Infectious agents have been implicated but none have yet been isolated. Some investigators feel that it is primarily a neoplastic process. An epidemiological study has hypothesized that Hodgkin's Disease may be subdivided into groups according to etiology. This study suggests that Hodgkin's Disease in young adults is an inflammatory state (chronic granulomatous), while the disease in patients over 50 is neoplastic.<sup>33</sup> A recent study by Rappaport, *et al.*, shows that blood vessel invasion by tumor occasionally occurs in Hodgkin's Disease. It occurs most often in advanced stages and in lymphocyte depleted types and is associated with short survival. He surmises that the disease is disseminated hematologically as well as by direct contiguity and is a malignant neoplasm.<sup>41</sup> These two studies imply that Hodgkin's Disease associated with short survival is probably neoplastic and fulfills the criterion for being malignant. Chromosome studies by Seif and Spriggs also favor the neoplastic hypothesis.<sup>48</sup>

The course of Hodgkin's Disease progresses at different tempos in different patients depending on genetic factors and the biological environment.<sup>47</sup> The untreated patient with Hodgkin's Disease usually has a series of exacerbations at intervals of weeks, months or years.<sup>51</sup> The observation of areas of involvement and spread has supported the concept that the disease arises in a single focus and spreads in a predictable way along adjacent lymphoid channels.<sup>44</sup> This is widely accepted and is the basis for cure by radiotherapy. This concept has recently been criticized by Smithers.<sup>49</sup>

## Histopathology

The history of the histological classifications of Hodgkin's Disease is a long one and beyond the scope of this paper. The Jackson-Parker classification was not useful to clinicians in determining the prognosis of the disease because 80 per cent of patients fell under the granuloma group.<sup>32</sup> Lukes classification as modified by the Rye Conference is found in Table 9 and is becoming more widely accepted. The new subgroup of the granuloma group called nodular sclerosis is an important discovery. This type has an affinity for the mediastinum and is more common in young females. It has a much better prognosis than the mixed cellular group.<sup>25, 40</sup>

The role of the classical Reed-Sternberg cell has been consistently disputed.<sup>53</sup> A recent study has found Reed-Sternberg-like cells in other diseases: carcinomas, melanomas, fibroxanthoma, other lymphomas, mycosis fungoides, multiple myeloma, infectious mono, rubeola, and others. The authors emphasize the need to make the diagnosis of Hodgkin's Disease

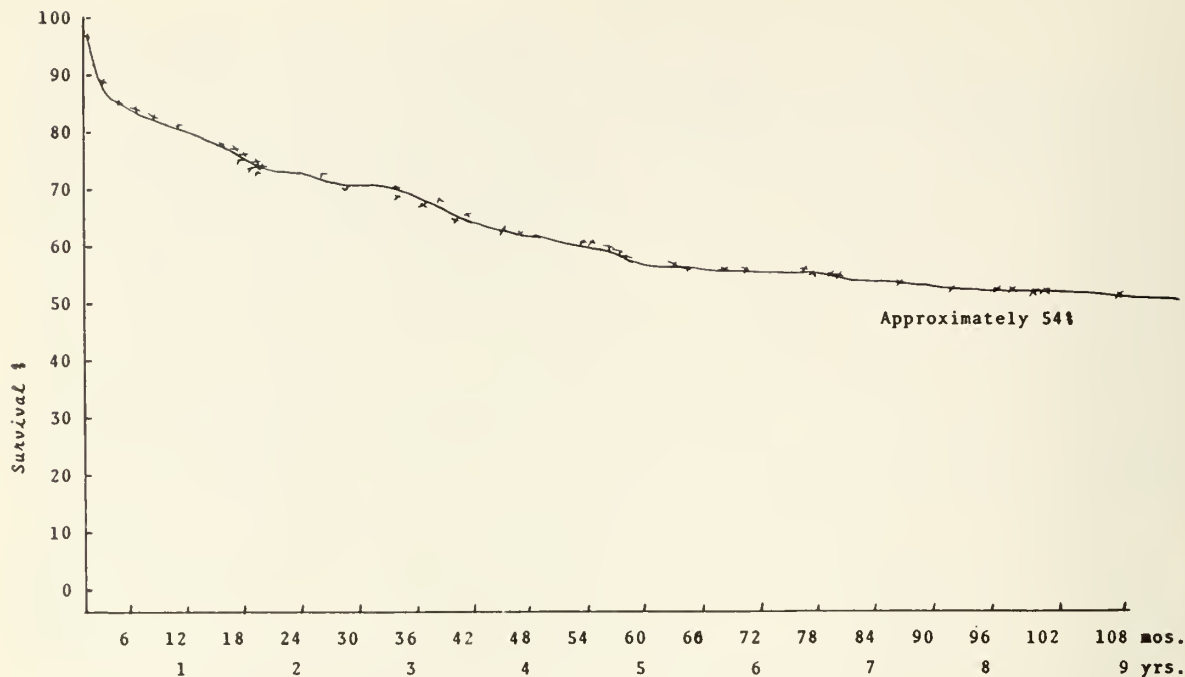


Figure 1. Overall actuarial survival for 141 patients.

in the appropriate cellular environment.<sup>50</sup> There is often difficulty in diagnosing Hodgkin's Disease with consistent accuracy. It has been reported that three competent pathologists could not agree on the diagnosis in a significant number of cases. The pathologist can therefore do no more in some instances than say, a section is consistent with Hodgkin's Disease.<sup>42</sup>

Table 5 shows the distribution of histological classification as correlated with sex, stage, and presence of disease. A majority of the patients were of the nodular sclerosing type. No patients alive had the lymphocyte depleted type and confirms the poor survival of this type. The males were predominant in every group except for nodular sclerosing, which showed a 3:1 ratio in favor of females. Figure 2 shows the excellent actuarial survival of lymphocyte rich, nodular sclerosing, and mixed cellular types in this series. The high survival percentage of the mixed cellular type may exist because of the large number recently diagnosed and still alive.

Several studies confirm the results found above. A study by Henry on long survivors found a good prognosis in patients with the lymphocyte rich and nodular sclerosing varieties.<sup>13</sup> The Rye Classification has therefore been found to be effective in predicting prognosis.<sup>25</sup> Cross, however, challenges this classification and its usefulness. He offers a new classification under three headings: reticular, histiocytic, and nodu-

lar sclerosis. They are further subdivided into well differentiated and poorly differentiated.<sup>4</sup> The application of this classification was also found to correlate well with clinical outcome.

### Staging

The concept of staging in Hodgkin's Disease is well accepted and allows the clinician to determine type of therapy and predict the prognosis. An excellent review has recently been published by Rosenberg and Kaplan on the evolution of staging classifications.<sup>46</sup> The Rye Classification (Table 2) is widely accepted, but a new one has recently been proposed from Stanford (Table 10). This classification attempts to combine the best aspects of the Rye Conference with those of Peters, *et al.*, 1968, and Musshoff and Boutis, 1969.<sup>46</sup>

The survival, as correlated with staging, is not significant in this report (Table 4) because of the short time interval from diagnosis to present. It is interesting that there are a significant number of patients who are Stage IV-B and have survived five years. Some of these patients were initially diagnosed as having less extensive disease (Stage I-III) but had a relapse and were finally staged IV-B. Keller has shown in his series that stages I-II are associated with much better prognosis than those with stages

TABLE 8  
CAUSE OF DEATH IN 16 PATIENTS WITH AUTOPSY REPORTS

Patient	Respiratory Failure	Complications of Therapy	Infection	Miscellaneous	Other
E.E.	—	Radiation pneumonitis with cor pulmonale	—	—	—
N.B.	—	—	—	Tumor pressing on pulmonary artery with pulmonary infarction	—
K.M.	Massive lung involvement	—	—	—	—
K.S.	—	—	—	—	Pulmonary embolism 2° thrombophlebitis
J.P.	—	—	—	Pericardial involvement constrictive pericarditis with pulmonary edema	—
J.T.	—	—	Septicemia	—	Viral encephalitis
C.A.	Lung involvement	—	Pneumonia	—	—
F.B.	—	—	Pneumonia	Hypercalcemia	—
M.M.	—	—	Pneumonia	—	—
C.M.	—	—	Septicemia	Liver failure	—
D.G.	Lung involvement	—	—	—	—
H.W.	—	—	Pneumonia	—	Thrombocytopenia 2° to Gold therapy for rheumatoid arthritis
R.B.	—	—	Septicemia	CHF and shock 2° hemolytic anemia	—
I.P.	—	—	Peritonitis	2° perforated intestine	—
L.L.	Lung involvement	—	—	—	—
E.M.	—	—	—	—	Myocardial infarct
Total	4	1	8	6	4

III-IV. Systemic symptoms present also lower the survival rate.<sup>25</sup>

Recent diagnostic tools have allowed for more accurate staging. Lymphangiography is one of the most valuable. Lee has given a good review of the indications and contraindications in Hodgkin's Disease.<sup>28</sup> Error in interpreting lymphangiograms is about 10 per cent and may be higher in inexperienced hands. The mistake is usually contained in false negative readings, but false positives may also occur. Lymphangiography is not without hazard and complications of pulmonary oil embolization, oil embolization to other organs, cellulitis at cut-down sites, and allergic reactions may occur.<sup>28</sup> Careful evaluation of the pulmonary function should be done before subjecting the patient to lymphangiography.

Laparotomy, splenectomy, paraortic lymph node and wedge liver biopsy all give valuable information in staging Hodgkin's Disease. Some investigators do this routinely and find that several patients had to be restaged after surgery.<sup>7, 11, 16</sup> Morbidity has been found to be low and splenectomy reduces the complications of splenic irradiation with possible renal and pulmonary damage.<sup>30</sup> Glatstein found that if the spleen is affected, there is a 63 per cent chance that the liver is involved. Conversely, there is only a 5 per cent chance that the liver is involved if the spleen is not affected.<sup>11</sup> Some investigators do routine bone marrow biopsy rather than marrow aspiration. They found that involvement of the marrow is not found by aspiration in many cases. Biopsy in these same patients will often show involvement and may alter their staging.<sup>53</sup>



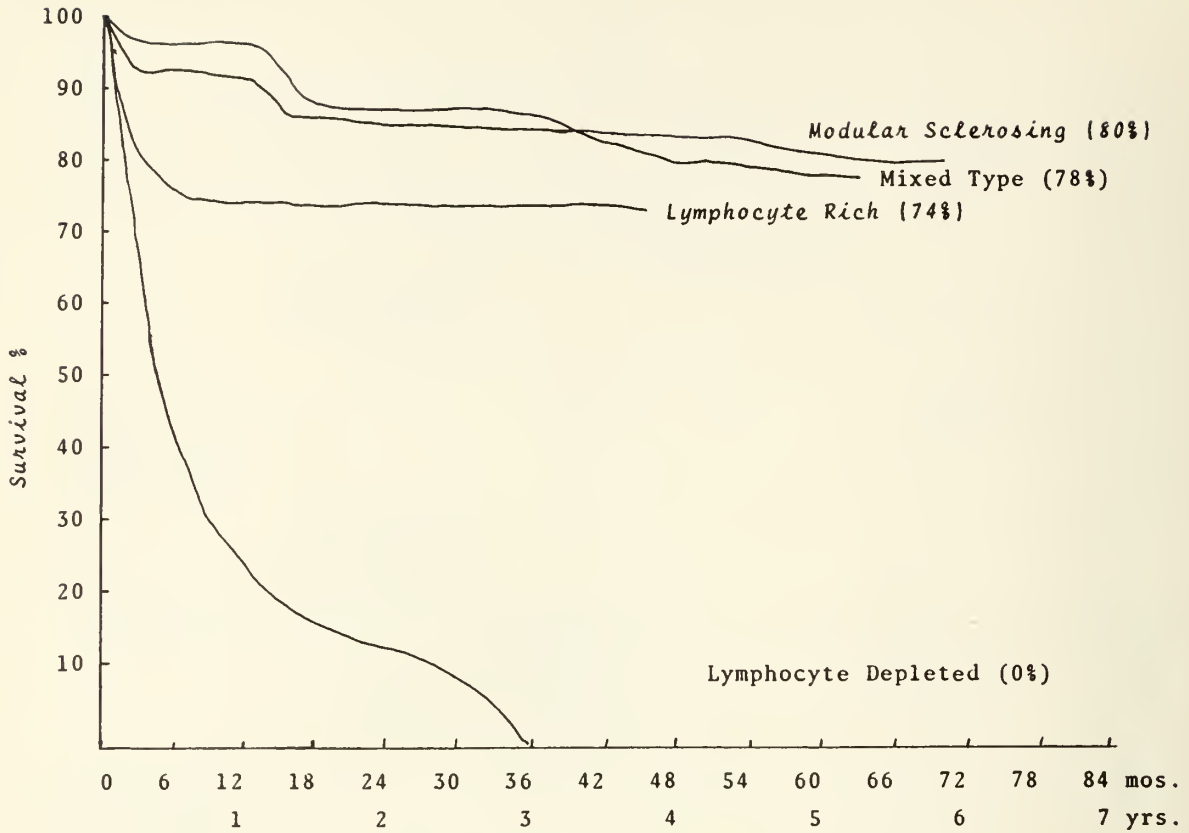


Figure 2. Actuarial survival correlated with histologic types (Lukes).

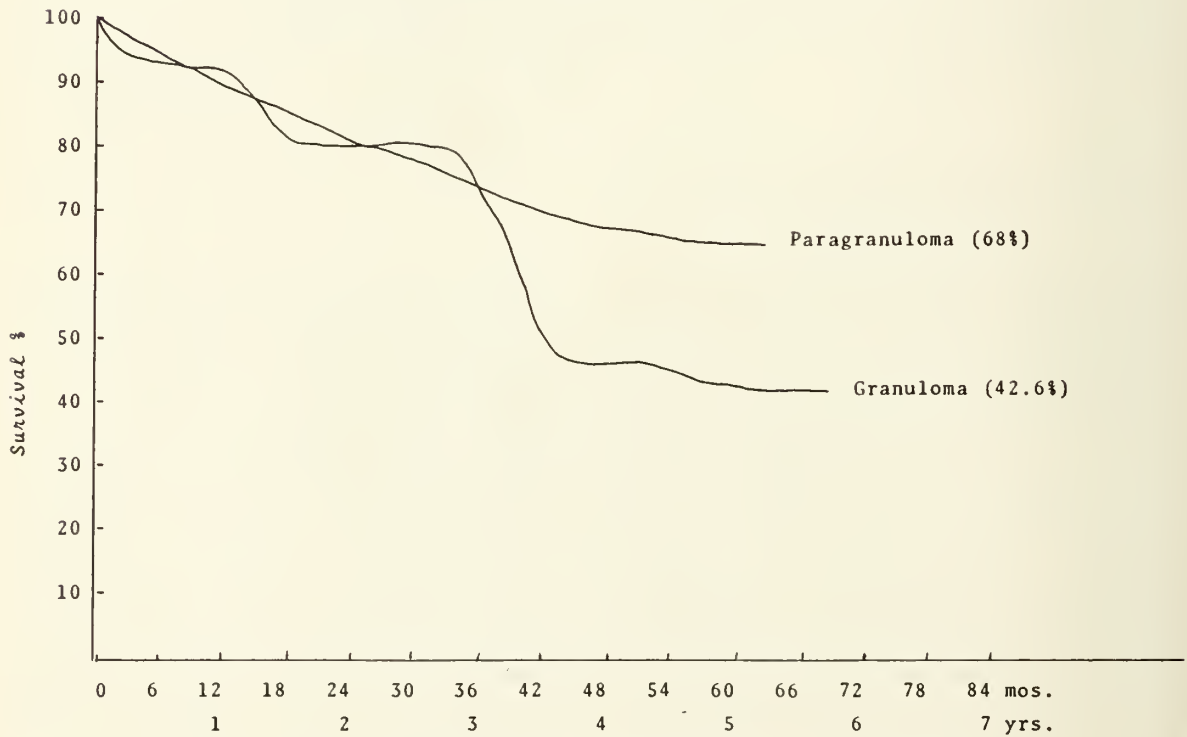


Figure 3. Actuarial survival correlated with histologic types (Jackson-Parker).

## Therapy

### Radiation

In 1939, René Gilbert set forth several basic principles on the use of radiotherapy in treating Hodgkin's Disease which are still in use today.<sup>10</sup> Kilo-voltage therapy was used for many years with varying degrees of success and is still advocated by some clinicians.<sup>15</sup> In the last 15 years, there is increasing use of megavoltage irradiation from linear accelerators, betatrons, and Cobalt 60 teletherapy units. With this high energy irradiation equipment it is possible to treat lymph node chains up to 4000 rads with little or no skin reaction. Other advantages include deeper penetration and sharply defined margins allowing treatment of nodes close to vital structures (heart, kidney, and lung).<sup>20</sup>

Kaplan has shown that there is an inverse relationship between tumor dose and recurrence rate per treated field. With 1000 rads or less, there is a recurrence rate of 60 to 80 per cent. With 4000 rads over a four-week period there is less than 5 per cent recurrence.<sup>20, 22</sup> *Figure 1* shows a plateau of the survival curve after two to five years. Kaplan reports that patients who survive without relapse for five years have a 95 per cent chance of being cured. He also shows that most recurrences (82 per cent) occur in the first two years after treatment with extended field irradiation.<sup>21</sup> The relapse-free interval after treatment has been shown to be an important prognostic indicator.<sup>23</sup>

Irradiation of adjacent areas and routes of lymphatic spread from an area of tumor involvement offers the patient better survival.<sup>39</sup> A study from Walter Reed Hospital shows marked improvement in survival of patients in early stage disease with "prophylactic" irradiation.<sup>2</sup> *Table 7* shows the excellent response of patients with extended field as compared to local irradiation in stage I-II patients. Treatment of stage III patients is still unsettled. More time and the results of different studies are needed. Aisenberg suggests that extensive radiotherapy is indicated for as many stage III patients as possible with the possible exception of patients with systemic symptoms.<sup>1</sup> Extended field therapy in six patients at KUMC with stage III show a 33 per cent recurrence rate (*Table 7*).

Total lymph node irradiation has been found to be associated with a lower incidence of recurrence than in extended field irradiation. An especially dramatic response has been found in stage III-A patients. Stage III-B patients were found to have a high recurrence rate in extra nodal regions. The inability to detect extra nodal sites of involvement is the major barrier to the cure of patients with irradiation.<sup>17</sup> Total nodal irradiation has been found to lower the tolerance of patients to chemotherapy. Care must be

taken in staging patients so as not to give irradiation when chemotherapy is indicated.<sup>5</sup>

### Chemotherapy

Chemotherapy in Hodgkin's Disease has been used when a cure by radiotherapy is not feasible. In most clinics the first agents used are the alkylating agents including nitrogen mustard, chlorambucil, or cyclophosphamide. When these agents become refractive, the use of the vinca alkaloids is usually employed.<sup>1</sup> Recent studies have shown that combinations of drugs produce a higher proportion of complete and partial remissions than single agents. The purpose of combination therapy is given a maximum tumoricidal effect with fewer toxic side-effects.<sup>9, 37</sup> Patients resistant to the alkylating agents and vinca alkaloids were found to respond to a new drug BCNU.<sup>29</sup> Steroids as a single agent of treatment should be reserved for cases of hemolytic anemia and thrombocytopenia.<sup>43</sup>

### Surgery

Surgery in the treatment of Hodgkin's Disease is not indicated apart from the role of biopsy and laparotomy for staging. There is no longer justification for radical lymph node dissection because of the frequency of silent microscopic disease in nodes beyond the limits of resection.<sup>20</sup> Those who endorse surgery usually suggest that radiation therapy be given in addition.<sup>27, 38</sup>

### Prognosis

The prognosis of Hodgkin's Disease is governed by histopathology, stage, and evidence of systemic symptoms. Even with the refinements in diagnostic ability, prediction of the disease outcome is often difficult. Some patients with unfavorable histopathology and localized disease survive for long periods. Conversely, patients with favorable histopathology have progressive disease and relatively short survival.<sup>43</sup>

Long survival of Hodgkin's Disease may be the result of adequate treatment, early treatment, or the biological characteristics of the tumor.<sup>13</sup> Long survival is attributed not only to newer methods of treating the disease but also to means of controlling complications which arise. Two important means are blood banking and antibiotics.<sup>51</sup>

A study of the extra nodal relapse rate of properly diagnosed and treated Hodgkin's Disease shows patients who are at a high risk for recurrence. Extra nodal sites include liver, lung and bone, and are unable to receive prophylactic irradiation as do lymph nodes in total nodal irradiation. High risk groups include patients who initially present with constitutional symptoms and have mixed cellularity or lym-

TABLE 9

1. Lymphocyte predominance	Abundant stroma of mature lymphocytes or histiocytes; no necrosis; Reed-Sternberg cells may be sparse.
2. Nodular sclerosis	Nodules of lymphoid tissue, partially or completely separated by bands of doubly refractile collagen of variable width; atypical Reed-Sternberg cells in clear spaces in the lymphoid nodules.
3. Mixed cellularity	Usually numerous Reed-Sternberg and atypical mononuclear cells with a pleomorphic admixture of plasma cells, eosinophils, lymphocytes, and fibroblasts; foci of necrosis commonly seen.
4. Lymphocyte depletion	Reed-Sternberg and malignant mononuclear cells usually though not always numerous; marked paucity of lymphocytes; diffuse fibrosis and necrosis may be present.

Rye Classification from Rosenberg and Kaplan.<sup>46</sup>

TABLE 10

Stage	
I	Involvement of a single lymph node region (I) or a single extralymphatic organ or site (I-E).
II	Involvement of two or more lymph node regions on the same side of the diaphragm (II) or solitary involvement of an extralymphatic organ or site and of one or more lymph node regions on the same side of the diaphragm (II-E).
III	Involvement of lymph node regions on both sides of the diaphragm (III), which may also be accompanied by involvement of the spleen (III-S) or by solitary involvement of an extralymphatic organ or site (III-E), or both (III-SE).
IV	Multiple or disseminated foci of involvement of one or more extralymphatic organs or tissues, with or without associated lymph node involvement.
A. denotes absence, B. denotes presence of systemic symptoms.	

Proposed Stanford Classification, 1970.<sup>46</sup>

phocyte depleted tumors. Placing these patients in a high risk group defines them as being unable to be cured by irradiation alone.<sup>18</sup> Some investigators suggest chemotherapy as an adjuvant to irradiation in these patients to irradiate microscopic involvement of extra nodal sites.<sup>17, 18</sup>

### Cause of Death

Table 8 shows a significant number of patients dying from infection. Death in four patients was due to extensive lung involvement with respiratory failure. There was one death resulting from complications of therapy—irradiation pneumonitis. One-fourth of these patients died from causes not related directly to Hodgkin's Disease. Ultman reported similar findings for the cause of death in 115 patients. Twenty-one per cent died of severe infection, 20 per cent from respiratory failure, 11 per cent from central nervous system involvement, 10 per cent died from gastrointestinal bleeding, and 7 per cent died of liver failure.<sup>51</sup> Complications of anemia, thrombocytopenia, and leukopenia all contributed to the deaths in that series as well as in this series.

### Summary and Conclusion

A clinical study of 141 patients with Hodgkin's Disease has been presented. Several earlier reports have been confirmed as to age and sex incidence. Survival time as correlated with stage, histology, and

therapy is presented. The survival time, however, is too short in this series to be statistically significant. Extended field irradiation appears to have a longer relapse-free interval than local irradiation.

In conclusion, the variability of Hodgkin's Disease must be stressed. Rosenbaum feels that this variability with regard to staging, histology, and treatment has made most clinicians slow to accept innovations in therapy which may be classified as still experimental.<sup>43</sup> Nevertheless, the total knowledge of Hodgkin's Disease has come a long way since the original description in 1832. With more controlled prospective studies, many new concepts of this disease will no doubt be uncovered in the near future.

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## *The President's Message*

### Medical School Expansion

A legislative recommendation for the expansion of the Medical School so completely coincides with the position held by the Medical Society on this subject, that your President sent the following to each member of the Legislature.

"The Kansas Medical Society has long studied the problem of the physician shortage in our state and we are genuinely concerned.

"We are convinced other states will not educate physicians for us because they, too, have pressing physician needs. Therefore, the Special Committee on Delivery of Medical Services has proposed an excellent solution, one that would educate additional Kansas young men and women for service in Kansas.

"Medical education is expensive and, therefore, must be carried out as economically as possible. Toward this end, the Society and the Kansas University School of Medicine have explored the most economical method, concluding that giving a portion of the students their third and fourth year in Wichita, essentially a clinical experience, is the most logical option. No great outlay on physical facilities is required. The only essential cost would be the employment of instructional personnel. Wichita has 3,000 hospital beds, 400 highly qualified physicians skilled in every medical specialty and the diverse patient load needed for a meaningful student experience.

"The basic sciences will continue to be taught at the Kansas City campus. The Society has studied the comprehensive recommendations of the Legislative Coordinating Councils' Committee on Public Health and completely endorses its findings—which calls for the training of part of the medical students in Wichita.

"In a recent statement, Senator C. Y. Thomas, Chairman of the Senate Committee on Public Health



and Welfare, stated the enactment of the proposed legislation marks by far the most forward step Kansas has made in medical education.

"We hope you will support this committee recommendation when it is presented for legislative consideration because we think this is a long step forward in supplying all parts of our state with adequate health care."

*Dr. J. Reak, M.D.*

*President*



## *Home Health Care: A New Emphasis*

**LESLIE E. BECKER, M.D.,** *Kansas City, Kansas*

The medical profession and, more specifically, the practicing physician have been experiencing a decade of stressful co-existence with the burgeoning problems of medical politicalization resulting from (1) maldistribution or shortage of medical personnel, (2) a compensatory spurt in health care costs, (3) increasing federal intervention by fiscal maneuvers, (4) employee cost of living increases and minimum wages, (5) dramatic rises in malpractice insurance costs, (6) consumer advocacy, (7) mandatory internal physical controls in medical practice due to proliferating tax requirements, (8) accountability to third parties not including the government, more demands for hospital committee work, county society activities, (9) an ever-increasing patient load. Rising spectacularly from this thicketry of challenges is the stimulated demand for increasing responsiveness of physicians to rising hospital costs. These demands have been accompanied by many well-thought-out proposals by the political philosophers and social pundits to include various plans, proposals and schemes for national health insurance, prepaid health programs, elimination of fee for service medical practice, which have not yet surfaced. The practicing physician has countered with plans for streamlining the actual practice of medicine in and out of the hospital by begging for repeals of the traditional hospital oriented health insurance programs in favor of out-patient services, by increasingly precise utilization of hospital beds, by surgical centers for minor surgery which can accommodate patients who do not require postoperative bed occupancy and by agreeing to Peer Review of hospitals and medical and office practice, somewhat reluctantly. In the midst of this political, economic and sociological turmoil, there is also the specific practice-of-medicine problem. The practicing physician

is seeing more patients in emergency rooms rather than making home calls which have proven to be inefficient, expensive, time-consuming and, many times, counterproductive. The physician has also expanded his in-office personnel so as to accomplish more comprehensive examinations and to prevent long hospital stays or even to avoid hospitalization if possible. The one most overlooked aspect in the realm of curtailing health care costs has been the Home Health Care Program.

It is a bit unusual in this tense atmosphere of medical reform that such an important aspect of the total health care picture as Home Health Care has been relegated to a secondary or even diminishing role in all of the schemes and proposals thus far publicized. As a matter of fact, the existing Home Health Care Programs have been deemphasized to the point of bankruptcy. The allegations from various spokesmen that it costs ten times more to treat a person in the hospital for a disease than in the office or an outpatient or as an ambulant care patient should turn instinctively to the sector of Home Health Care as a possible solution. Some of the existing agencies providing home health care have been harassed, frustrated, audited and surveyed for the sole purpose of disallowing valid and reasonable efforts at rendering home health care. The main provider of home health care in our county is the Visiting Nurses Association. The Visiting Nurses Association is a local group of registered nurses, organized and sponsored by community-minded citizens to provide home nursing care to bedridden or shut-in patients and is a functioning arm of the American Nurses Association. They are supported by contributions and donations from the community and charge nominal fees for services rendered. The scope of activities involved in home nurs-



ing care by the Visiting Nurses Association includes the following: (1) continuity of care for the ill and aged in the home, under the direction or supervision of the family physician or in response to written orders from the physician, (2) to maintain the patient in the home environment as long as it is justifiable, (3) to provide qualified nursing care, physical therapy and personal care to those who cannot afford to pay for the services. As a corollary to these efforts one must note that these activities tend to prevent re-hospitalization or extended hospital care or emergency room expense for the patient and ultimately for the community. It also makes it possible to shorten the hospital stay for the ill and/or injured person, regardless of age. There is also the opportunity to teach neighbors, relatives or concerned persons in the routine of home care for the ill and aged in their personal environment. The Visiting Nurses also are able to inform the ill, the injured or the aged of other sources of additional help as needed since they act as the intermediary between the physician, the hospital and the other health agencies in such situations.

If we now reflect on the many ways by which to reduce the total cost of health care, it is quite appar-

ent that home health care is a very important focus for reducing the expenses element in health care. It also relieves the practicing physician of some of the arduous duties relating to follow-up care of the ill, the aged or the injured or handicapped. As an educational arm of the medical profession this is an invaluable asset and gives access to the health delivery system to many who would be submerged by the complexities and costs of obtaining such care.

It would appear that our political and social leaders have overlooked this broad area of health care rendered by individuals who are community-minded and competent to render such services at minimal expense compared to hospitalization, nursing homes, emergency rooms, or even, in some cases, a visit to the physician's office for advice, supportive care, systematic care, or continuing care. It would be worth while for the administrators of the various health plans and health agencies to take another look at the scope of activity of the nurses and to render fiscal and legislative support to expanding the program so as to absorb an area of health needs which would ultimately benefit the community and the health professions.

## UNIVERSITY OF KANSAS SCHOOL OF MEDICINE

### POSTGRADUATE MEDICAL EDUCATION

#### Symposia

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ALEX AZAR, M.D., Haskell Laboratories, Newark, Del.  
JOHN M. FREEMAN, M.D., Johns Hopkins University.  
LORNE K. GARRETTSON, M.D., State University of N. Y. at Buffalo.  
MILO GIBALDI, Ph.D., State University of N. Y. at Buffalo.  
MELVIN GREER, M.D., University of Florida.  
J. T. JABBOUR, M.D., University of Tennessee.  
JOHN H. MENKES, M.D., University of California, Los Angeles.

##### Subjects to be discussed:

CLINICAL AND BIOCHEMICAL ASPECT OF THE LIPOIDOSES.  
MANAGEMENT OF STATUS EPILEPTICUS.  
CLINICAL ASPECTS OF BRAIN TUMORS IN CHILDREN.  
NEONATAL SEIZURES, DIAGNOSIS AND MANAGEMENT.  
PROBLEMS IN DIPHENYLDANTOIN THERAPY.  
ALLERGY, SINUSITIS, AND SEIZURES AS A CAUSE OF LOW-  
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JAMES C. THOMPSON, M.D., University of Texas.  
CLAUDE E. WELCH, M.D., Harvard Medical School.

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CURRENT CONTROVERSIES IN ULCER SURGERY.  
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#### DEPARTMENT OF POSTGRADUATE MEDICAL EDUCATION

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# American Medical Association

## *Actions of the House of Delegates, 25th Clinical Convention, New Orleans, November 28-December 1, 1971*

### **Medical Students**

No less than five items of business—Report I of the Board of Trustees and four resolutions—concerned this subject, reflecting the intensity of interest. These items were studied by a reference committee and a substitute resolution was offered in lieu of all of them—referring the matter to the Board for study of mechanisms to include students in the organizational structure.

But the House rejected the move. It adopted instead an amended resolution on motion of the California delegation. The House approved "creation of a special section for medical students and a section for interns and residents." It directed that the Council on Constitution and By-Laws "develop appropriate language to accomplish this purpose," working with representatives of the Student American Medical Association and representatives of the interns and residents. The long-heard appeal of students and younger physicians for a voting voice in the AMA was thus answered.

### **President's Address**

AMA President Wesley W. Hall, saying, "our House of Medicine is sorely in need of some major repairs," repeated his call for a Constitutional Convention, or other appropriate procedure, for a basic review of organizational structure and programs. He first suggested such a convention upon his inauguration last June.

Dr. Hall said that since that time he had traveled throughout the nation and heard from physicians "hundreds of unsolicited views on medicine in general, on problems they are encountering in their practice and on our stewardship of the AMA.

"Frankly, I am troubled and disturbed by what I see and hear," Dr. Hall told the House, "and I am more convinced than ever that we need a basic review of our Association's organizational structure."

There is continuous review and evaluation of AMA structure and programs, the committee said.

"Changes in the Constitution and Bylaws at every meeting bear this out. Recent changes in membership provisions with respect to interns and residents, as well as current changes in the status of medical students and voting powers of the vice president are prime examples."

The committee said the Council on Long Range Planning and Development was an appropriate mechanism for reviewing structure and programs, and to serve as a focal point for planning activities.

### **Vice President**

There was overwhelming support for Resolution 55, to give the vice president of the AMA voting privileges on the Board of Trustees, and the measure was quickly adopted by the House. Presently, the vice president attends Board meetings, with the right of discussion but no vote.

### **Non-Member Participation**

The House amended the Bylaws to permit those physicians who are not members of the AMA to participate in AMA scientific programs as "invited guests." The recommendation came from the Board of Trustees, which said the programs should be available to all members of the profession. The Board report said "non-member physicians, eminent persons from foreign countries, and residents of the United States who are not engaged in the practice of medicine" may be invited to participate.

### **Dues for Interns and Residents**

The House established annual dues of \$20 for interns and residents as members of the AMA. The amount was calculated "solely to cover some of the costs of the benefits of membership," such as receiving AMA publications. Interns and residents currently may join the AMA in two ways: Through active membership in a state association or, where there are no provisions for such membership, by direct application to the AMA. In either case, they must pay the \$20 AMA dues.

### **Physicians' Assistants**

Several major actions were taken in regard to the rapidly developing field of physicians' assistants.

The House directed that the AMA, through its Council on Health Manpower, "assume a leadership role in developing and sponsoring a national program for certification of the assistant to the primary care physician, who functions at the highest level of re-

sponsibility described by the National Academy of Sciences as a 'Type A' assistant."

Delegates also adopted a report of the Council on Medical Education, outlining essential requirements for AMA approval of educational programs for such assistants. The essentials were developed in collaboration with the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians and the American Society of Internal Medicine.

Essentials of an approved educational program for urologic physicians' assistants, outlined in another Council report, went back to the Council for further study.

The House directed the Board of Trustees to develop guidelines on compensation of physicians for the services of their assistants, and to report back to the House next June.

### Miscellaneous

Immediate action to improve the quality of emergency medical services in the United States was urged in a Board of Trustees report adopted by the House. The report said:

"Those medical societies that have not already done so are urged to establish councils on emergency medical services or to assign that subject area to an appropriate existing council, whose responsibility should include developing action-programs in emergency medical services to meet their area's needs and maintaining liaison with groups at all levels of organized medicine concerned with emergency medical services."

Small communities without necessary resources to develop their own systems "should consider linking together with surrounding communities to form a regional system." Skilled personnel and high quality equipment and facilities should be provided, the report said, and the medical profession should see to it that quality of service is periodically evaluated. The report also recommended a single agency at the federal level with responsibility for all governmental efforts to improve emergency medical services.

Physicians should be active, the report recommended, in a number of areas including: participating in planning and operation of community health programs; using all means at their disposal to ensure that all people are afforded equal access to adequate medical and health care; supporting campaigns against factors harmful to health such as lead poisoning, drug abuse and poor housing; and supporting health education programs in schools, homes and the mass media. The federal government should be urged to consolidate all federal health programs under one department and to provide long-range approval and

multiple-year funding—rather than annual funding—to help retain top staff, the report said.

*Submitted by:*

Lucien R. Pyle, M.D.

John C. Mitchell, M.D.

*Delegates from Kansas*

## Making Childhood Safer

*(Continued from page 57)*

able but have not yet been endorsed. In Wichita, Kansas, with the exception of one military pharmacy, CRCs are not being used at the present to any significant extent. Pharmacists, physicians and patients are inadequately aware of the availability of CRCs and their documented worth. Federal requirements for CRCs are likely in the future. Organized medicine and pharmacy have another opportunity to choose between acting before the government does or reacting after the government acts. CRCs for all prescription tablets and capsules should be in use now, and initiation of their use lies within the reach of physicians and pharmacists.

Several companies manufacture child-resistant containers. The Owens-Illinois products (Screw-loc vial and Safti-collar) are represented here.

### References

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6. Metropolitan Life Insurance Company: Accidental poisoning at a high level. *Statist. Bull.* 49:9, 1968.
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9. Why should a child swallow drain cleaner? *Consum. Rep.* 36:529-531, 1971.

A concerted nationwide program is being launched to curb deaths of heart attack victims before they reach hospitals. It is called Early Coronary Care System, sponsored by the National Committee on Early Coronary Care. A kit of major interest to doctors has been prepared in cooperation with the American Heart Association. For a copy, please write to Ralph H. Major, Jr., Vice President, Arthur Schmidt & Associates, Inc., 342 Madison Avenue, New York 10017.





**SURGERY AND BIOLOGY OF WOUND REPAIR** by Erle E. Peacock, Jr., M.D. and Walton Van Winkle, Jr., M.D. W. B. Saunders Company, Philadelphia. 1970. 630 pages. \$21.50.

Wound healing has been of vital importance to physicians since the earliest observations of recorded medical history. Surgeons and their patients depend upon satisfactory healing of wounds, and many empirical observations have been made in the past without understanding the mechanisms of impaired or even normal healing processes. The present day accumulation of the relatively recent biologic studies of this age-old process is now put together in a fascinating book, *Surgery and Biology of Wound Repair*, by especially qualified authors. This is not yet a culmination of the final answers in wound healing, but it is an exciting account of a decidedly modern cellular and even subcellular biology; more importantly, it is a call to a newer concept that the newly synthesized scar creates problems by the disruption of tissue integrity, by the replacement of vital complex cellular functions, and by the constrictive or restrictive aspects of scar tissue. Perhaps, in the future, alteration of the end-result for the purpose of preventing excessive scar formation may be possible.

The important and traditional parameter of tensile strength of a wound is reviewed with particular emphasis on those environmental factors which the surgeon can control; such considerations are given not with the idea of "hastening" wound healing but of assuring optimum healing.

The wealth of information, from the very basic intracellular chemistry and structure to the very practical considerations for the clinical surgeon, is a gold mine of source material. It is also interesting reading which provokes new ideas about old concepts. Of practical consideration, the repair of skin wounds, burns, tendons, fascia and muscle, peripheral nerves, bone, and viscera are chapters of importance to all

surgeons. Of scientific consideration, the concepts of collagen synthesis, the biochemistry and environment of wounds, cellular regeneration, and the implications of lathyrism, in which there is a defect in the maturation phase of wound healing, are chapters of stimulating ideas.

The book is clearly illustrated; there are good lists of suggested reading for each chapter, a relatively complete index, very few factual inaccuracies, and there is value in it for students, teachers, and practitioners of surgery.

The book is good reading; one gets the idea that great concepts are in the offing, such as controlling the degree of scar formation, of adhesion formation, of cellular regeneration, of optimal cellular integrity and function; these may be the most important new concepts of surgical biology.—S.R.F.

**HANDBOOK OF POISONING** by Robert H. Dreisbach, M.D. Lange Medical Publications, Los Altos. 515 pages. \$6.00.

*The Handbook of Poisoning* by Robert Dreisbach, Seventh Edition, is a very complete and extensive handbook bringing together the diagnosis and treatment of clinically important poisons. The book particularly has been expanded because of the importance of so many chemical products in industry, agriculture and domestic processes which have an effect upon the population. The author did make note that the Seventh Edition had also been translated into Spanish.

This book is concise but very complete in the subjects covered. As an example, a section on Ozone is written to even explain how the products are produced in the atmosphere, at which times of the day they are most prominent, the areas of peak concentration, and giving some examples of days and hours that have exceeded the standard set for certain communities in their air concentration.

This is just an example of some of the detail that is available to readers of this excellent text.—C.A.N.



#### LEWIS C. BLACKBURN, M.D.

Dr. Lewis C. Blackburn, 60, of Chanute, died November 11, 1971, at his home in Chanute.

Dr. Blackburn was born June 7, 1911, at Hugoton, Kansas. He was graduated from the University of Kansas School of Medicine in 1941. He had practiced in Topeka, Chetopa and Galena prior to establishing his practice in Chanute.

Dr. Blackburn is survived by his wife, and a son.

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#### RODNEY G. CARTER, M.D.

Dr. Rodney G. Carter, 73, of Independence, died December 2, 1971, while making a routine house call.

Dr. Carter was born November 9, 1898, in Otterville, Missouri. He was graduated from the Washington University School of Medicine at St. Louis in 1926. Dr. Carter established his practice at Independence in 1928.

Surviving him are his wife, two sons and a daughter.

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#### WILLIAM H. CLARKSON, M.D.

Dr. William H. Clarkson, 95, of Manhattan, died December 9, 1971 at St. Mary Hospital.

Dr. Clarkson was born January 15, 1876 in Nebraska. He was graduated from the Kansas Medical College of Topeka in 1900, and began his practice in Manhattan in 1903.

Survivors include two brothers.

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#### BRUCE P. MEEKER, M.D.

Dr. Bruce P. Meeker, 74, Wichita, died December 16, 1971. He was born at Belle Plaine, Kansas and was graduated from the University of Colorado School of Medicine in 1928. Dr. Meeker established his practice in Wichita in 1933.

Survivors include his wife, two sons and a daughter. A memorial fund has been established with the Wesley Medical Center Development Program, 550 N. Hillside, Wichita.

KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity  
Incidence  
Summary of Cases Reported in November, 1971 and 1970

Diseases	November			January-November Inclusive		
	1971	1970	5-Year Median 1967-1971	1971	1970	5-Year Median 1967-1971
Amebiasis .....	2	6	2	20	30	14
Aseptic meningitis .....	2	15	—	14	41	10
Brucellosis .....	—	—	—	1	2	1
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	1	3	1	44	27	20
Encephalitis, post-infect. ....	—	—	—	6	1	2
Gonorrhea .....	545	489	405	6,778	6,244	4,626
Hepatitis, infectious .....	40	78	40	565	487	381
Measles (Rubeola) .....	4	2	*	1,396	71	*
Meningococcal meningitis .....	—	1	—	28	9	15
Mumps .....	58	11	*	915	154	*
Pertussis .....	1	—	—	13	8	8
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	1	4	3
Rubella (German Measles) .....	8	5	*	627	56	*
Salmonellosis .....	15	37	21	500	266	266
Scarlet fever .....	4	5	4	52	83	52
Shigellosis .....	79	26	26	865	138	138
Streptococcal infections .....	260	138	138	4,355	3,855	2,558
Syphilis .....	100	142	104	1,262	1,346	1,267
Tinea capitis .....	6	11	6	20	45	45
Tuberculosis .....	20	20	20	148	197	45
Tularemia .....	—	—	—	3	1	3
Typhoid fever .....	—	2	—	—	2	2

\* Statistics not available for 5-year median.

## MOSQUITO-BORNE ENCEPHALITIS

This year marks the fourth consecutive season for intensified arthropod-borne encephalitis surveillance in Kansas. The program was developed to serve as an early warning alarm system of possible epidemics of encephalitis. The program consists of maintaining sentinel chicken flocks for serological testing, operation of mosquito traps and equine encephalitis surveillance.

Heavy spring and summer rains produced conditions resulting in high densities of *Culex tarsalis* mosquitoes, the main vector of encephalitis in Kansas. The above-normal numbers of mosquitoes combined with the presence of arboviruses resulted in the highest incidence—33 human cases—of arthropod-borne encephalitis in Kansas since 1958. Mos-

quito control practices offered some defense against the mosquitoes by reducing the population of the vector in several areas of Kansas.

Eight sentinel flocks were utilized during 1971; one flock each in Great Bend, Hutchinson, Dodge City, Scott City, Colby, Phillipsburg, Courtland, and Russell. Serological conversions were observed in all sentinel flock locations during 1971. Six of the flocks maintained developed antibodies of both SLE and WE. Virus isolation studies performed on mosquitoes trapped in August resulted in isolations of Western encephalitis virus for the first time in Kansas.

A total of 39 equine cases were reported from veterinarians in 28 counties of Kansas. The case distribution was widespread with only two counties reporting as many as three cases. Southeast Kansas reported an unusually high number of equine cases.





## *Personalities*—IN KANSAS MEDICINE

William Nice, Topeka, presented the certificates to 140 persons at the conclusion of a 13-week diabetes lecture series. Participants included nurses, dietitians, nursing home administrators, and paramedical personnel throughout northeast Kansas.

A volunteer surgical team that performed medical and surgical services at a mission hospital in Haiti recently included **Ivan H. Carper**, Newton.

**William Aldis**, Fort Scott, returned from volunteer service in Vietnam.

A sign reading, "Dun Practisin," was hung on his suite in the office building by **Robert W. Diver**, Coffeyville. Dr. Diver practiced at the same location for 35 years.

**Robert A. Gollier**, Ottawa, participated in a drug abuse program recently. He suggested a telephone hookup which could serve to provide communication for those in need of information.

Governor Robert Docking has reappointed **James J. Basham**, Fort Scott, to a four-year term on the Kansas Board of Regents.

**William G. Eckert**, Wichita, was the principal speaker at the Kansas Traffic Court Conference held recently in Salina.

Credited with the development of one of the finest disaster plans in the nation and presented a plaque of appreciation for his efforts was **Henry Blake**, Topeka.

**Willard C. Schwartz**, Manhattan, has announced his retirement from practice after 40 years.

Launching his own version of the good neighbor policy, **G. Bryant Boyd**, Lakin, is taking one day a week out of his full schedule to keep a neighboring county hospital open.

**C. H. Benage**, Pittsburg, was named chairman of the newly appointed City-County Joint Board of Health.

After serving three months in Afghanistan, **H. L. Patterson**, Larned, returned to his practice here. His term of duty was under the auspices of Care-Medico organization.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

**Donald C. Bailey, M.D.**  
3333 E. Central, Suite 504  
Wichita, Kansas 67208

**Phillip L. Baker, M.D.**  
918 W. 10th  
Topeka, Kansas 66604

**Lawrence E. Bare, M.D.**  
520 Main  
Goodland, Kansas 67735

**Claude D. Bonham, M.D.**  
100 East Ninth St.  
Topeka, Kansas 66612

**H. David Clifton, M.D.**  
3400 Grand  
Wichita, Kansas 67218

**Dan A. Kelly, M.D.**  
109 Medical Arts Bldg. W.  
Topeka, Kansas 66604

**Tommy E. Kendall, M.D.**  
925 N. Emporia  
Wichita, Kansas 67214

**W. P. Mazur, M.D.**  
Oswatomie State Hospital  
Box 500  
Oswatomie, Kansas 66064

**Duane A. Murphy, M.D.**  
3333 E. Central, Suite 504  
Wichita, Kansas 67208

**Conrad C. Osborne, M.D.**  
3232 E. Pine  
Wichita, Kansas 67208

**Dwight K. Oxley, M.D.**  
550 N. Hillside  
Wichita, Kansas 67214

**Rogelio Sanchez, M.D.**  
918 W. 10th  
Topeka, Kansas 66604

**Richard W. Spann, M.D.**  
3333 E. Central-Suite 404  
Wichita, Kansas 67208

**Lawrence J. Wilchins, M.D.**  
9100 W. Central  
Wichita, Kansas 67212

# The Month in Washington

The Price Commission restricted increases in a physician's fees to 2.5 per cent a year when justified by increases in his costs, but granted the right of appeal to the Internal Revenue Service for a further increase for those physicians with greater increases in their costs of conducting a practice.

The official regulations went into effect Dec. 29, a day before they were published in the Federal Register. The commission earlier had announced guidelines on which the regulations were based.

The regulations require that a physician maintain a schedule of fees and increases with a sign in his office that such a schedule is available for inspection. But he does not have to post them in his office.

After issuance of the regulations, AMA officials continued meetings with Federal officials in efforts to effect modifications of provisions considered unfair to physicians. The meetings started before issuance of the guidelines.

One meeting was with Donald Rumsfeld, director of the President's Cost of Living Council, a few days before the regulations were issued. Dr. Max H. Parrott, chairman of the AMA Board of Trustees and head of its delegation, voiced strong exceptions to some of the price control provisions which would deny treatment equal to that given other providers of professional services.

The Price Commission has ruled that "a non-institutional provider of health care services may charge a price in excess of the base price only to reflect allowable costs in effect on Nov. 14, 1971, and allowable cost increases incurred after Nov. 14 reduced to reflect productivity gains, and only to the extent that such increased price shall not result in an increase in such provider's profit margin as a percentage of revenues, before income tax, over that prevailing in the base period, providing, however, that the provider's aggregate price increases shall not exceed 2.5 per cent per year."

The AMA has pointed out that the Price Commission's 2.5 per cent limitation on the increase of physicians' fees was discriminatory inasmuch as other providers of services could reflect actual increases in cost by a "pass through" of such costs, a procedure denied physicians under the proposed regulations.

The AMA also pointed out that while the Price Commission urged increased physician productivity, the proposed regulations might well decrease productivity.

The physician cannot generally work longer hours than he is presently working, the AMA position paper said. He can expand his office space, purchase

new testing and diagnostic aids, and employ more staff.

But held to a 2.5 per cent fee increase—in the face of higher costs . . . he is apt to do none of these things.

The AMA paper also took exception to the proposed requirement for the posting . . . or having available . . . a fee schedule. It is simply not practical for a physician to arrive at a schedule of prices for each and every one of the numerous services he renders, the AMA said, pointing out that it was its understanding that the Committee on Health Services Industry . . . an advisory body to the Price Commission . . . recognized this fact and had recommended that posting be limited to institutional providers.

The AMA also pointed out that the proposed guidelines do not provide for a procedure under which physicians whose fees are below the norms in their communities may adjust their fees. Physicians usually maintain their fees for several years and then increase them by 10 or 20 per cent to counter inflation, rather than impose annual increments of 25 or 50 cents, the AMA said, insisting that the proposed regulations should contain reasonable criteria for handling unusual situations such as these.

At the suggestion of Mr. Rumsfeld, the AMA has taken its case directly to C. Jackson Grayson, Jr., chairman of the Price Commission and additional meetings have been scheduled.

\* \* \*

The federal government reported at the end of 1971 that outbreaks of influenza were hop-scotching across the country in a fashion typical of the 1969 epidemic that struck an estimated 30 million Americans.

The National Center of Disease Control (NCDC), a part of the Department of Health, Education and Welfare with headquarters in Atlanta, Ga., said some of the influenza has been identified as the Hong Kong variety and some as "influenza-like." School absenteeism ranging as high as 30 per cent was reported by communities hardest hit by the bug.

The influenza struck swiftly and spread rapidly. Practically no outbreaks were reported by state health departments in a telephone survey conducted by the NCDC on Nov. 17-18. But another phone survey conducted Dec. 21 revealed outbreaks in New England, the middle Atlantic states, midwest, south and the far west. The Hong Kong influenza "has been documented in Connecticut, Kansas, Michigan, New Jersey and Utah," the NCDC said.

"Increased influenza-like disease has been reported

from Colorado, Idaho, Indiana, Louisiana, Maine, Massachusetts, Montana, New Mexico, Oregon, South Dakota and Wyoming," the center said.

The disease was reported to have caused mild symptoms in its victims.

The World Health Organization said that influenza epidemics, much of it caused by the Hong Kong virus, have broken out in both eastern and western Europe.

\* \* \*

Thirty-seven states and the District of Columbia were given until Feb. 1 by the Department of Health, Education and Welfare to improve what was termed "substantial deficiencies" in their standards for nursing homes.

"Unless such improvements are validated by the Feb. 1 target date, HEW intends to initiate a . . . procedure that could ultimately result in withholding all federal medicaid funds from any or every one of the 38 states," HEW Secretary Elliot L. Richardson said.

He referred to such standards as fire, sanitation, safety and medical services that are substandard in 37 states and the District of Columbia.

Richardson told the White House Conference on Aging that the deficiencies were found in a survey undertaken at President Nixon's request and completed Nov. 15. Kansas was included in the list of states undergoing the survey.

## FAT-MODIFIED DIETS IN HOSPITALS

Fat-modified diets for all hospital patients will be encouraged in the selective cycle menus published in *Hospitals, Journal of the American Hospital Association*, starting January 1, 1972.

The change in the hospital journal's policy is based in part on a report of the Inter-Society Commission for Heart Disease Resources (ICHD) which made three recommendations aimed at preventing heart disease: changes in the American diet, elimination of cigarette smoking, and pharmacological control of elevated blood pressure. The dietary changes include adjustment of caloric intake, reduction of dietary cholesterol, and substantial reduction of saturated fat.

Recognizing that there is a difference of opinion concerning the importance of diet in connection with heart disease, the ICHD suggests that at times public health decisions must be made on the basis of incomplete evidence, and recommends that these "reasonable and safe changes" be implemented promptly.

The ICHD represents 29 leading medical, nursing and allied health organizations, including the AHA, and includes more than 100 physicians, experts in the area of cardiovascular disease.

The ICHD report calls on all sectors of the public health and medical community to develop a comprehensive and sustained public and professional nutrition education program around these recommendations.

# FRIDAY, MARCH 17, 1972—LUNCHEON "A MEDICAL-SCIENTIFIC FORUM"

PRESENTED BY  
A PANEL OF KANSAS UNIVERSITY MEDICAL CENTER  
SPECIALISTS

**WILLIAM E. LARSEN, M.D.**, Moderator, Professor of Medicine  
**LOREN J. HUMPHREY, M.D.**, Professor and Chairman, Department of Surgery  
**JAMES LOWMAN, M.D.**, Professor of Pediatrics  
**ALVAR A. WERDER, Ph.D.**, Professor of Microbiology



### QUESTION AND ANSWER PANELS

Friday—11:45 A.M.

Friday—4:45 P.M.

Saturday—12:00 NOON

**SPONSORED BY**  
**AMERICAN CANCER SOCIETY**  
**KANSAS DIVISION, INC.**  
**824 TYLER, TOPEKA, KANSAS**

For further details, see page 13.





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### FEBRUARY

- Feb. 14-16 American College of Surgeons Sectional Meeting. Chase-Park Plaza, St. Louis. Write: T. E. McGinnis, American College of Surgeons, 55 E. Erie Street, Chicago 60611.
- Feb. 25 American College of Physicians (Kansas Regional). Topeka. Write: John L. Morgan, M.D., 919 West 12th Avenue, Emporia, Kansas 66801.

### MARCH

- Mar. 1-5 American College of Cardiology Annual Scientific Session. Conrad Hilton, Chicago. Write: William D. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Bethesda, Maryland 20014.
- Mar. 13-15 American College of Surgeons. Joint meeting, nurses/doctors. Sectional Meeting. Bellevue-Stratford Hotel, Philadelphia.
- Mar. 16-17 25th National Conference on Rural Health, sponsored by the AMA's Council on Rural Health. St. Francis Hotel, San Francisco.
- Mar. 17-18 Midwest Cancer Conference. Broadview Hotel, Wichita. See announcement on page 13.
- Mar. 23-26 Athletic Injury Briefings, National Coaches Conference. University of Notre Dame. Write: Notre Dame Center for Continuing Education, South Bend, Indiana.

### POSTGRADUATE EDUCATION

University of Kansas:

See announcement on page 70.

University of Colorado:

- Mar. 9-11 *Diagnostic Ultrasound in Medicine*
- Mar. 27-30 *Trauma*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 80220.

University of Missouri-Columbia School of Medicine:

- Feb. 16-17 *Orthopedic Conference*
- Feb. 22 *Rehabilitation Nursing (Amputees)*
- Mar. 8-9 *Diabetes Mellitus*

For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.

### RECENT ACQUISITIONS

New books received are acknowledged herewith, and such acknowledgment must be regarded as sufficient return for the courtesy of the sender. Books are listed with advance data supplied by publishers. Prices quoted are not guaranteed. Books here listed are available for lending from the Stormont Medical Library, Topeka, Kansas.

HANDBOOK OF OBSTETRICS & GYNECOLOGY: By Ralph C. Benson, M.D. Los Altos, Calif., 1971, Lange. 774 p. Price: \$6.50.

SYNOPSIS OF PEDIATRICS: By James G. Hughes, M.D. St. Louis, 1971, Mosby. 1141 p.

HANDBOOK OF PSYCHIATRY: By Philip Solomon, M.D. and Vernon D. Patch, M.D. Los Altos, Calif., 1971, Lange. 648 p. Price: \$7.50.

SYMPOSIUM ON THE FUNCTIONAL PHYSIOPATHOLOGY OF THE FETUS AND NEONATE: By Harold Abramson. St. Louis, 1971, Mosby. 182 p. Price: \$15.00.

# Medical-Legal Page

## Deformed Infants' Suits for Failure to Recommend Abortions

Whether an infant born with physical and mental defects may sue a physician for failing to recommend an abortion is discussed in a law review article.

Such lawsuits have generally been disallowed for two reasons, the author states. The first is that the infant's damages for "wrongful life" are incapable of being ascertained. The second reason is that the courts believe that the encouragement of abortion is contrary to public policy.

Two lawsuits in which children born with physical and mental defects sued physicians were discussed by the author. In the first case, a woman consulted a physician when she was two months pregnant. She informed the physician that she had contracted rubella one month earlier. She asked the physician about possible birth defects. The physician allegedly told her that the disease would have no effect on the child. However, the child was born with defective sight, hearing, speech and mental capacity.

Suit was filed against the physician on the child's behalf. It was claimed that the physician had been negligent in failing to inform the woman of the possible birth defects. It was contended that this negligence caused the child's parents to fail to obtain an abortion.

Affirming the dismissal of the infant's claim, the New Jersey Supreme Court ruled that it was impossible to ascertain the infant's damages. There is no method of placing a value on nonexistence, the court said. The court also noted that the "preciousness" of human life outweighed the need for recovery.

In the other lawsuit discussed by the author, a woman had contracted rubella during the first trimester of pregnancy. A hospital committee was undecided as to whether or not an abortion should be performed. Notwithstanding this indecision, a hospital physician told the woman that she did not need an abortion and advised her not to seek an abortion at any other hospital. The child was born with serious mental and physical defects.

Dismissing the child's claim against the hospital, a New York appellate court ruled that abortions were contrary to public policy. The court also ruled that it was impossible to determine the child's damages.

The author discusses the traditional method of computing damages in negligence cases. He points out that the present condition of the injured person

is compared to the condition the person would be in if the negligent act had not been committed. The difference represents the amount of damages suffered by the person.

The courts have indicated that a fetus that has been aborted is nonexistent. The condition of a nonexistent person cannot be compared to the condition of a child born with defects. Since there can be no comparison between the two conditions, the courts reason that it is impossible to determine the child's damages for failure to recommend an abortion.

Believing this reasoning to be incorrect, the author asserts that such damages can be determined. Noting that life without defects is preferable to life with defects, the author assigns a positive value to life without defects and a negative value to life with defects. Since an aborted fetus is nonexistent, the author assigns a zero value to such status. The author then indicates that it is possible to compute the damages of a non-aborted defective infant by comparing the theoretical positive value of life without defects to the theoretical negative value of life with defects.

In his argument, the author rejects the statements of the courts that life with defects is preferable to nonexistence. The author believes that nonexistence is to be valued more highly than existence with major defects, such as blindness, deafness, physical deformity, and mental retardation. However, the author also believes that life with minor defects is preferable to nonexistence.

The author does not mention any method of definitely determining that a fetus is defective or of determining the degree to which the fetus will be defective. The author also does not discuss the possibility of a claim against a physician who recommends the abortion of a fetus later found to be non-defective or to have only minor defects.

The fact that such lawsuits by infants have been disallowed because the courts have ruled that abortions are contrary to public policy is also discussed by the author. The law regarding abortions is in a state of flux, the author notes. In states where abortions are permitted only in strictly limited circumstances, the author speculates as to the physician's duty to advise a patient that abortions are lawful in certain other states under less restrictive conditions. A physician's moral convictions, the author states, should not permit him to conceal the possibility of defects or to prevent the patient from seeking further medical advice.

Concluding his article, the author states that the physician's duty to inform the parents of possible de-

*(Continued on page 82)*

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# Woman's Auxiliary

## ... Annie talks about a new kind of Bussing

When one has house guests for two weeks accomplishing even the most routine chores is a little like doing the old Lindy Hop. You know . . . "two steps forward and one step back." Except this is in reverse. Writing a column or anything that requires quiet and thinking is impossible with company around.

But I promised to tell you something about the new Health Careers bus this time, and New Year's Day is as good a time as any to turn over a new page of copy and give it a try. Besides, Annie has a week of vacation coming up and she's going south and will miss the deadline otherwise. Can't have that when you are just getting used to hearing from me, now can I?

So, back to the bus. The Auxiliary Health Careers Chairman, Mrs. Warren Meyer, Wichita, has spent most of her spare time this last few months negotiating here and there and has come up with a cooperating arrangement with the Kansas Health Museum, the State Board of Health, and others.

The use of the old x-ray bus has been given us by the State Board of Health, who are also paying for the insurance on the bus. At present, the vehicle is being stripped of its old facilities and installed with materials to spread the Health Career story to the Kansas schools. This part of the operation has been assumed by the Kansas Health Museum, Halstead. Exhibits from the AMA, Red Cross and other health agencies will be used also.

However the primary purpose of the bus is to spread the word about our great need for allied health manpower to the students. It is estimated that the health field will be the nation's largest industry by 1975, and that 25 people in allied fields will be needed to accommodate each physician. So, we

thought we ought to get started getting them ready for you.

The auxiliary believes in getting 'em while they're young, so we will have materials for elementary schools to start them thinking in your direction, more definite materials to give the "feel" of the various fields for the junior high level, and realistic programs with information on requirements, locations of schools, and materials on loans and scholarships for the senior high school students.

Each county auxiliary is to appoint a health careers chairman to be responsible for the bus when it is in her area. This chairman will make initial contacts with school personnel, arrange for local health representatives (dentists, dieticians, nurses, technicians, etc.) to talk to students, and supply additional information also.

The auxiliary will be responsible for the bus while it is in town and for getting it to the next checkpoint with a driver who has a chauffeur's license.

The bus is to be available after the May convention. Already people are signing up and asking for a date to be arranged for their area. Routing will be scheduled to eliminate long distance drives, and every opportunity will be made to create effective, efficient coverage with each stop. If you want the bus for your area, contact:

Mrs. Warren Meyer  
730 Brendonwood  
Wichita, Kansas 67206

In other words, we want to get the word out. We hope that by doing this we will create enough interest in health manpower to have adequate competent personnel for you to work with. So, here's to that "wonder working power." Health manpower, that is.  
Auxiliary Annie

## 113th Annual Session Kansas Medical Society

May 7-10, 1972

Hilton Inn, Salina

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## Bedside Cardiac Catheterization

(Continued from page 55)

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## Medical-Legal Page

(Continued from page 80)

fects is the same as the physician's duty to inform his patient concerning any other medical procedure or treatment.—*A Cause of Action for "Wrongful Life,"* 55 Minnesota Law Review, No. 1, p. 58 (November, 1970), published by the Law School of the University of Minnesota, 125 Fraser Hall, Minneapolis, Minnesota 55455

### Abortion Issues Pending Before the U. S. Supreme Court

The constitutionality of various statutory provisions with reference to abortions is an issue in several appeals before the United States Supreme Court in the present 1971-1972 term. Questions involved in the appeals include:

Does the Georgia Act unconstitutionally infringe upon the right of a physician to practice medicine, or upon the right of a married woman to decide whether to bear a child? Should a federal court enjoin state enforcement of a state abortion law? Appeal from *Doe v. Bolton*, reported in *The Citation*, Vol. 23, p. 43.

Is the Illinois Act unconstitutionally vague? Does it violate a woman's right to privacy? Does Illinois have the right to legislate protection of an unborn child at all stages of gestation? Appeals from *Doe v. Scott*, reported in *The Citation*, Vol. 23, p. 24.

Is the Louisiana Medical Practice Act's provision for revocation of the license of a physician who performs an abortion not necessary to save the mother's life unconstitutionally vague or indefinite? Appeal from *Rosen v. Louisiana State Board of Medical Examiners*, reported in *The Citation*, Vol. 23, p. 26.

Did a federal court properly refuse to take jurisdiction of a suit challenging the constitutionality of the Missouri Act? Appeal from a decision of a federal trial court in Missouri, September 10, 1970, in *Rodgers v. Danforth*, not reported.

Are abortion restrictions in North Carolina, including a residency requirement, constitutional? Appeal from *Corkey v. Edwards*, reported above in this issue of *The Citation*.

Was a federal trial court wrong in refusing to enjoin enforcement of the Texas abortion laws after declaring them unconstitutional? Appeal from *Roe v. Wade*, reported in *The Citation*, vol. 22, p. 65.

Buy

U.S. Savings Bonds

## NEW GRANT PROGRAM TO IMPROVE MEDICAL TRAINING ON ADDICTIONS

The National Institute on Alcohol Abuse and Alcoholism and the Division of Narcotic Addiction and Drug Abuse, both within the National Institute of Mental Health, today jointly announced a new grant program to help medical schools develop courses of instruction on two of the foremost health problems in the United States today—drug abuse and alcohol abuse.

The new program provides medical faculty the opportunity to pursue expertise in the drug abuse and alcohol abuse areas through one or two years of specialized training. Faculty members trained with grant support under this program would then have the responsibility to assume leadership in developing effective drug abuse and alcohol abuse curricula within their medical schools.

The program is designed to improve and expand the training which future medical students will receive on drug abuse and alcohol abuse. It is hoped that medical schools will respond to this new opportunity to add or improve drug abuse and alcohol abuse training in their courses of instruction.

## HEALTH CARE DOLLARS

The 1972 president-elect of the American Hospital Association sees early changes in the health care delivery system that will stress health maintenance and conserve health dollars for the individual.

John W. Kauffman, executive vice president of the Princeton Hospital, Princeton, N. J., presents his views on the health care delivery system in the January 1 issue of *Hospitals, Journal of the American Hospital Association*.

Mr. Kauffman suggests that health care dollars can be spent in a different way "to reduce the incidence of general hospital admission by concentration on health maintenance."

For many years the general hospital has been over-utilized (some patients have been kept in the hospital bed too long and others shouldn't have been there in the first place), Mr. Kauffman said. He advocates the expansion of extended care facilities to reduce the direct cost to the individual, and the use of these dollars in health maintenance programs. "This is where the delivery system is going to change," Mr. Kauffman said. "As a hospital administrator, I can't change this. The only way it can be changed is through working and obtaining the understanding and willingness of the medical profession. I'm not sure how we can do that, but I think it will be through a continuing education effort. The nation doesn't have unlimited dollars for health care, and we must find a way to spread them around and do a better job with them."

## Vox Dox

Vox Dox Editor:

Your editorial in the December 1971 JOURNAL concerning Dr. Earl Sutherland states "It would be interesting if some day some sociologist would investigate the number of Burlingames. . . ."

It might be of interest to you that an article of this tone appeared in the *U. S. News and World Report* some eight to ten years ago. It was reported that among the scientists at Cape Kennedy concerned with the space program, the majority of them had graduated from high schools with less than 100 in the graduating class and more than ten years prior to the time the article was written. The author was wondering what had been lost in education in the intervening years with our large schools.

Just thought you might be interested in this little pearl.

C. T. McCoy, M.D.  
Hutchinson, Kansas

**TUESDAY EVENING, MAY 9**

**PRESIDENT'S BANQUET**

**Annual Meeting**

**Kansas Medical Society**

**May 7-10, 1972**

**Hilton Inn**

**Salina**

## Kansas Press Looks at Medicine

### *Doctors for Rural Areas*

McDill (Huck) Boyd, editor of the *Phillips County Review* and Republican national committeeman, addresses himself to the problem of a lack of doctors in rural areas in the following editorial:

Every time a new and more sophisticated piece of equipment is purchased for a medical school these days, rural medicine suffers another setback.

Young men and women who learn the basic fundamentals of this honorable profession on such equipment feel they can only serve in areas which have it.

And no general hospitals outside the largest cities can possibly afford the expensive tools which are today provided for specialists in highly technical fields.

So this generation winds up educating specialists instead of general practitioners—and rural medicine holds no appeal for the specialist. There are too few times when his exacting skills are called upon in areas thinly populated.

Actually, in Kansas, 90 per cent of the graduates from the K.U. Medical Center, have entered speciality fields for the last 10 years. Only 10 per cent (or less) become general practitioners.

One hears many reasons for this—but the most compelling factor is the type of education graduates have received. They work closely with a specialist in one of many fields while in school and during their internship. They have available the very latest and most costly equipment used by the specialist—a standard which far exceeds that needed by any general practitioners.

So young doctors—no matter how they might be otherwise motivated—find themselves clustered close to hospitals which have the most highly sophisticated equipment—and entering speciality fields.

Now we need specialists—and they need the very best equipment to diagnose and treat the problems of the very ill. But we also need general practitioners to take care of people with ordinary ailments; to treat their abrasions, to stitch their wounds, to prescribe the medicines as needed—and—to refer the sick to specialists when emergencies arise.

Unless steps are taken to reverse this flow of young

doctors, and channel their steps toward general medicine, one of these days a man must be able to diagnose his own ailment in order to determine which specialist to see.

The problem is a serious one. Every medical school wants "the very best, the very latest" equipment—but those who learn on this equipment feel they must have it available when they open a practice.

As a result, many rural areas, no matter how solid their economy, are deprived of medical services to a far greater extent than people in the poorest ghetto; and pushes up the cost of hospital and medical care everywhere.

There is a simple and effective way to reverse this distressing trend.

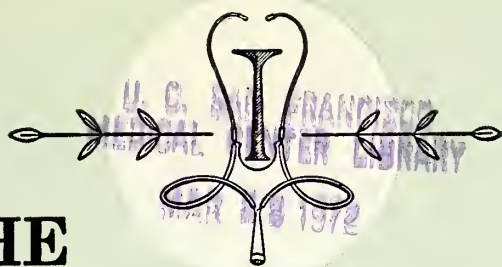
Fledgling doctors should take their clinical work and internships in hospitals like those at Salina, Hays, Wichita and Topeka—hospitals which meet the general, average run of medical problems on a practical basis every day. The Medical Center should offer the necessary academic work under highly skilled instructors; and give those few students with appropriate skills the proper background for speciality service.

In this manner, the capacity of the medical center would be increased; young doctors would get practical background under day-to-day experience in the field; and there would be more doctors to treat the sick, and refer the very ill to the specialist.

But until the emphasis on speciality training is reversed at the medical schools all across the country, it will continue to become more and more difficult to persuade young doctors to move to a rural area if all of their educational background has been directed toward one particular speciality.

Kansas has taken the lead in many related fields throughout the years. It was the first state to abolish the public drinking cup and the common towel. It was first in the field of treatment for crippled children, the control of tuberculosis and mental health. Let it now be the first to meet the crying needs of general medicine. That's the field where 95 per cent of all medical practice lies anyway.—*Coffeyville Journal*, Coffeyville, Dec. 8, 1971.





THE  
Journal  
OF THE  
Kansas  
Medical  
Society





The negative power of undue anxiety  
in congestive heart failure...

This man thinks he can no longer  
take breathing for granted.



Typical of many patients with congestive heart failure, he also suffers from severe anxiety, a psychic factor that may influence the character and degree of his symptoms, such as dyspnea. His apprehension may also deprive him of the emotional calm so important in maintenance therapy.

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The positive power of

**Libritabs®**  
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**t.i.d./q.i.d.**

up to 100 mg daily

for severe anxiety  
accompanying  
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**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

**Contraindications:** Patients with known hypersensitivity to the drug.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

**Precautions:** In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

**Adverse Reactions:** Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

**Supplied:** Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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Twenty-Sixth  
Annual  
University of Kansas  
School of Medicine  
Issue

# The Dean's Letter—1972

## *The University of Kansas Medical Center*

WILLIAM O. RIEKE, M.D.,\* *Kansas City*

WORDS ARE A POOR substitute for the warm and sincere greeting I wish could be extended personally to each reader of the JOURNAL of our State Medical Society, from the University of Kansas Medical Center and from all of the Rieke family. Even so, I am grateful for this opportunity at least to say "hello" and to share with you some of the exciting news and plans that are evolving in our state's major health professional training, service and research center.

Although it was possible to make a brief appearance at last year's meeting of the State Medical Society before I was in office, and although air and automobile travel have amassed a good many miles north, south and west in Kansas since I arrived officially on last July 1, there are a great many of you whose acquaintance I am yet to make. My family is joining me in plans to get out in the state regularly so that we may increase our circle of professional acquaintances and friends as rapidly as possible. In the meantime, and until we staff our Dean's office to the point that "double duty" is no longer required, I can only ask your patient understanding.

In spite of being pretty much inundated during the last few months (witness my embarrassing slowness or even failure to respond to some of your correspondence!) it has been possible to make significant forward strides in a number of important areas at the Medical Center. Undoubtedly, you have heard of our proposal to increase the number of physicians graduated by developing a Wichita State University Branch of the University of Kansas School of Medicine. The proposal which by formal mail ballot was supported by more than 90 per cent of the regular faculty at our Medical Center was given unanimous endorsement by the State Board of Regents on September 17, 1971. I am most pleased to say that it has been recommended for the funding required to make a modest beginning on it by the Governor in his budget message on January 11, 1972. If fully implemented and developed on schedule, this program

would allow KUMC to increase its entering freshman medical class beyond the 15 additional students taken on an emergency basis in the fall of 1971 such that each entering class would be expanded from the regular level of 129 accepted in 1970, to a new regular level of 200 by the summer of 1974. The need for such an increase is seen not only in the statistics documenting the shortage of health professionals in Kansas but also by the fact that many qualified students who apply for admission to our Medical Center cannot be accepted. Certainly, it is most distressing when, as happened during the present year, applicants are sorted out through the final interview stages and still more than 300 *Kansans* are judged to be capable of success in medical school, but only less than half of these can be accepted. It disturbs me as much as it must you that among those turned away were nearly 30 whose overall undergraduate grade point average was 3.0 ("B") or better! We *must* develop the means to train more.

After extensive study, I am thoroughly persuaded that the quickest, cheapest and educationally *best* way to make a major increase in the medical class size is through the proposal to open a clinical branch at Wichita. In this plan (given the needed physical expansion at Kansas City) 200 students could be accepted by 1974—much sooner than so many additional students could begin training under any other plan. All 200 would receive their basic science training in Kansas City. Since we are in the final stages of developing the possibility for a three-year curriculum, within about one year approximately one-third of these 200 students would elect or be assigned to go to Wichita for their last two years which, would include their complete clinical training culminating in the M.D. degree. The existence of many more hospital beds in Wichita than are present in all of Kansas City, Kansas obviates the requirement to develop extensive new facilities in Wichita and saves both money and time. The opportunity for at least some students to receive their complete clinical training in *community hospitals* (as opposed to the University Medical Center Hospital) should hold special appeal and, in fact, may be expected to increase the number of new physicians who have experienced

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\* Vice-Chancellor for Health Affairs, the University of Kansas Medical Center, Kansas City, Kansas 66103.



enough clinical medicine in community hospitals in Kansas to want to remain and practice in similar situations within our state. Dr. D. Cramer Reed has been named Dean of the proposed new branch, and I am aware, from the fact that he reports directly to me, of the extensive efforts he is making to prepare the way so that if the proposal receives legislative approval, it may be implemented as rapidly as possible.

Associated with the Wichita plan is a proposed building program in Kansas City, which is requisite in order to teach increased numbers of students and to update antiquated clinical facilities such that, as KUMC reaches out more and more to hospitals in other communities for some of its general medical education functions, it may further develop its appropriate role as a highly competent and well equipped regional referral center for difficult diagnostic problems and those requiring tertiary care. Already approximately two-thirds of the patients in KUMC's hospital are from areas other than metropolitan Kansas City, and our capability to continue to serve as such a resource must be maintained. Hence it is proposed to erect a new basic science facility which will be an educational unit only (no offices, research laboratories, etc.) and an ambulatory care and hospital care building. While the costs, especially of the latter, will be significant, this building is essential to the continued vitality—indeed, the very survival—of our center even if it were not planned to increase the size of our medical classes. I am heartened by the fact that a large portion of the cost of construction of the clinical facility can be amortized through our own (hospital) earnings, and am especially encouraged by the fact that our clinical faculty are willing to pledge several millions of dollars of their own professional earnings toward debt retirement on this facility. Such commitment on the part of faculty as well as such a gift to the state is *without parallel* in my experience during building programs I have experienced at two other major state medical schools!

We will need your understanding and active support to our legislature for the total proposal involving expanded medical education in Kansas. If the foregoing brings questions to mind, I hope you won't hesitate to call me.

As KUMC grows and strengthens its base at home, it will continue its active out-reach for new affiliated programs in postgraduate (residency) and to a lesser extent undergraduate (pre-M.D.) programs in other Kansas communities. We have actively negotiated with some of you during this past fall and are anxious to pursue these to fruition just as soon as time and resources permit. There is little doubt that KUMC could do much to assist physicians in local

communities as well as help retain more physicians for Kansas by developing ongoing training programs (of varying kind and scope) in as many Kansas communities as resources and local interest permit. I am anxious to work toward this and solicit your support!

Finally, a few miscellaneous specifics about your state medical center which, though I list them briefly, are all very important:

1. It may gratify you (as it did me) to learn that during 1971, those of KUMC's medical graduates who took Part III of the National Board Examinations—that part which has to do with *clinical skills* as opposed to either clinical or basic *science*—ranked KUMC *seventh* in the nation in competition with such schools as Harvard, Michigan, etc.
2. A special study committee has been appointed to evaluate and suggest ways of upgrading our program in nursing education. KUMC, as you may know, is the only institution in the state that offers graduate degrees in nursing and thereby prepares nurses to *teach* other nurses. This and other functions need strengthening.
3. KUMC has been authorized to create a separate *full* department of Radiation Therapy, and a search committee for a new chairman has been appointed. This is part of a plan to develop an interdisciplinary approach to the teaching, research and therapy of cancer so that our center might qualify to become one of the nation's new major regional cancer centers.
4. Two new and experimental pilot programs involving small numbers of individuals have been instituted either through Kansas RMP or entirely in the Medical Center to train nurse-clinicians and emergency technicians. The purpose of these is to provide a slightly different approach to the training and testing of few "physician's assistant" types about whom there is so much current interest but also so much uncertainty.
5. A task force is studying new ways to prepare and offer training in a variety of allied health fields. Such innovation is overdue and very much needed.

Though there is more, I have imposed on you long enough. If you have read this far, I hope you have gained at least a few general insights into some of the significant and encompassing activity that we find so engaging at KUMC.

I repeat my thanks for your support and my genuine hope that I may soon be able to meet many more of you. Please, when you are in the Kansas City area, drop in to see me!

Very kindest regards!

# Medical Education—Minorities

## *Medical Programs for Disadvantaged Students at KUMC*

FRANCIS E. CUPPAGE, M.D.,\* *Kansas City, Kansas*

TYPICALLY, the freshman medical student matriculating at the School of Medicine of the University of Kansas Medical Center has been a Kansan, from the majority racial group, with solid B grades. The student has most often had the opportunity of an excellent premedical preparation and can often afford to contribute a significant percentage toward the financing of his medical education. In the past, relatively few have been academically, racially, or economically disadvantaged. Recent statistics would indicate that Blacks compose approximately 10 per cent of the national population and four per cent of the population of the state of Kansas.<sup>1</sup> The same source indicates that approximately five per cent of the population of Kansas consists of minority racial groups. Often, the racial minorities are also academically underprivileged by the nature of their education and economically underprivileged by the nature of their livelihood. National and state policies have recently moved in the direction of increasing minority participation in the health care system at the professional level. Realizing the need to provide more minority individuals in the health careers, members of the faculty of the University of Kansas Medical Center were called together to study and implement educational opportunities for minority students. The original goals centered about the recruitment, enrichment, and retention of disadvantaged students. Specifically, the objective was to provide educational opportunities to a reasonable number of motivated and capable minority students, so that they might provide additional needed health services to the people of Kansas. The term "disadvantaged" will be used to describe certain students who have the potential to become competent physicians or other health professionals, but are compromised in the competition for professional school admission for reasons of racial, educational, or economic factors. A wide variety of local and national groups were consulted, and attempts were made to involve both minority students and faculty in these deliberations. The following discussion will be an attempt to review the minority student educational programs that have been developed at the Medical Center so that stu-

dents, counselors, and health professionals within the state of Kansas can appreciate our programs and assist us in the fulfillment of these goals.

### **Coordinator of Minority Student Programs**

During the early phases of the consideration of these opportunities, the faculty of the Center realized the importance of a full-time director to coordinate and implement these programs. A group of faculty was called together as a Council on Minority Student Affairs, specifically to advise the Vice-Chancellor of Health Affairs concerning a director of affirmative action programs. The job description developed provided that this individual was to be of sufficient academic stature to be an acceptable peer of any faculty member within the Medical Center. The director was to be from a minority group and was to have experience in recruiting and educating disadvantaged students. The Medical Center is very pleased to announce the addition of Chester J. Rempson to our faculty as the Assistant Vice-Chancellor for Affirmative Action Programs. Mr. Rempson will also be Assistant Professor in the Department of Human Ecology.

### **Recruitment**

The University of Kansas Medical Center in Kansas City is the only medical school in the state. The willingness to admit the motivated and potentially successful minority student into the school is not as widely known, especially to the student who may be counseled early. In addition, the allied medical professional opportunities are also often unknown. In order to inform the high school and college counselors throughout the state of the educational opportunities for minority students, a Conference on Minority Student Health Careers was held at the Medical Center on October 16, 1971. This conference was sponsored jointly by the Medical Center and Project 75, a National Medical Association project, to assist in the development of minority student health career opportunities in the health centers throughout the nation. Also active in the planning of this conference was Doorstep, Incorporated, an inter-church agency of Topeka, concerned with the disadvantaged citizens of that city and of the state. The

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conference—the first of its kind in Kansas—was attended by 16 high school counselors representing 12 state-wide high schools, 36 college counselors from 30 Kansas colleges, a number of students from high schools, colleges and the Medical Center, and representatives of a number of social action groups throughout the state. National and local consultants participated in addresses, panel discussions, and workshops. Financial, social, and academic problems of the minority students were reviewed and open forums concentrated upon recruitment, tutoring, counseling, and financial aid for these students. The conference served to crystallize the thoughts of our faculty concerning the opportunities, and many favorable comments were received from the participating Kansas counselors and students.

### **Summer Enrichment Programs**

Nine minority students were admitted into the freshman medical class of 1971. In May, 1971 these students were brought to the Medical Center to evaluate their financial needs and academic background. All were found to be in need of significant financial aid, and applications for state and national funds were processed. All received a significant amount of aid. Three of the students were found to have academic backgrounds that suggested a need for pre-matriculation enrichment. As no such summer programs were available to these students outside of Kansas, the faculty of the Medical Center took the charge upon itself to develop such a program at the Medical Center. A group of basic science faculty in anatomy, biochemistry, and physiology volunteered their time in addition to their regular duties to provide a ten-week summer remedial program. The three students were brought to the Medical Center, given financial assistance to cover their living expenses, and were tutored in the three first-year disciplines as well as in mathematics and reading skills. At the end of the program, both faculty and students felt that the program had been beneficial. Several problems, however, have become highlighted. One of these is our difficulty in objectively measuring the disadvantaged students' academic backgrounds, intellectual capabilities, and the ever-important aspects of motivation. Ongoing study is in process to develop testing and other methods to help make these evaluations.

### **Retention**

Although some disadvantaged students may be admitted at below average levels temporarily, until the undergraduate opportunities have been fully developed for them, the medical faculty affirms the need to maintain a single standard of excellence for the conferring of the M.D. degree. Therefore, in addition to enrichment programs before matriculation, re-

duced academic loads and tutoring are being used throughout significant portions of the medical curriculum. Special study technique programs are being developed for future implementation. Funds for tutoring by teaching assistants and graduate students have been made available by the Center. Numerous faculty members have volunteered their time for this assistance. Medical education is very expensive. Of primary importance is financial aid for economically disadvantaged students. The continued concern and fear of lack of finances diverts the mind from productive study. The school administration, with the help of Project 75 and Doorstep, Incorporated, has found financial doors through both local and national funding agencies. A reasonable amount of grants, loans, and other forms of aid have been made available through the financial aid office of the Medical Center.

### **Federal Program Funds**

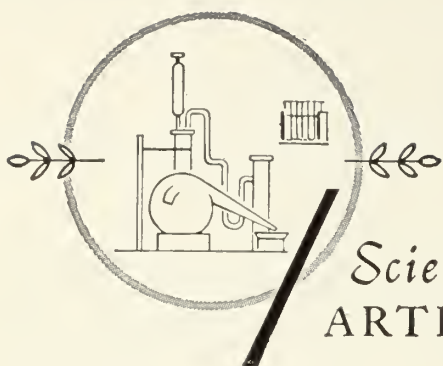
The administration and faculty of the Medical Center have realized the need for financial assistance for the health career educational opportunity programs. In September, 1971 the administration proposed and received a \$14,000 Health Career Program Grant from the American Association of Medical Colleges. These funds will be used to provide an information system for the recruitment of minority students, such as student-faculty team visitations throughout the state, and additional health career symposia at the Medical Center. Expansion of the enrichment programs and the development of better techniques for the evaluation of disadvantaged candidates for the health professions, as well as additional tutorial and study technique programs, will be studied.

Several additional points need to be mentioned. This discussion thus far has been centered around the minority student programs for the School of Medicine. Equally important are the programs for the numerous allied health programs—such as medical technology, medical records, nursing, occupational and physical therapy, dietetics, and others. In general, these programs are ongoing at the Medical Center. We hope to continue these efforts and further coordinate our affirmative actions in the numerous health careers.

One additional and important benefit derived from our program for disadvantaged students is our greater understanding of the need for special attention into the academic, financial and social problems of our standard students. For too long we have attempted to stamp all of our students out of one mold. We are now developing a more flexible curriculum designed to graduate better physicians and to better

*(Continued on page 104)*





Scientific  
ARTICLES

# Genetics and Malignancy

## *Genetics and Malignant Disease*

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### Introduction

THE ROLE OF GENETICS in the etiology of cancer in man is controversial. While a great deal of effort has been expended in delineating heritable pathogenetic factors in lower animals, most research work in humans has been directed toward external causal agents. In part, this difference in emphasis has been related to the standard problems confronting human geneticists; e.g., man's long generation time, poor reliability of retrospective studies, and the nature of cancer as an age-dependent disease. While progress has been understandably slow, advances have been made, and more and more meaningful data is beginning to accumulate. The identification of the high-risk family and, more specifically, the high-risk individual is a prime consideration in contemporary preventive medicine. Even in those situations where the inheritance pattern is not readily apparent, it may be essential to quantitate the contribution of genetics for the purpose of establishing research priorities. Thus, as pointed out by Lilienfeld, if a disease is shown to be 100 per cent genetic, then most of the investigative effort should be directed toward identification of the defect in the high-risk patient.<sup>1</sup> On the other hand, if genetic factors have only a small role, then the appropriate research orientation should be to-

ward potential etiological determinants in the external environment.

Some malignancies are due solely to mutant genes, and as such are inherited along classic Mendelian lines. Others are associated with cytogenetic abnormalities, but it is less clear whether the chromosome aberration per se is pathogenetically important or is merely a concomitant event. Relatively common tumors also have been reported in familial aggregations, but here the existence of two or more individuals in the same family affected with the same neoplasm may be well within the realm of statistical probability. Many contemporary authorities feel that most malignancies have at least a small genetic component, and in view of the recent national emphasis on cancer, it seems relevant at this time to review briefly the current status of genetics in the etiology of malignant disease. While the following format is similar to the usual system review, it must be recognized that many "tumor syndromes" have the potential to manifest nonmetastatic disease in more than one organ. For the purpose of illustration the most obvious clinical manifestation generally has been chosen. The interested reader is referred to the bibliography for a more detailed treatment of many of these entities.

### Skin

Many tumor syndromes have cutaneous manifestations and these have been reviewed recently.<sup>2</sup> All

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clinicians are familiar with the neurofibromas of von Recklinghausen's disease. Although the peripheral lesions may undergo sarcomatous degeneration, central manifestations of this condition, such as optic glioma and acoustic neuroma, more often are the cause of severe disability. The disorder is inherited as an autosomal dominant; any offspring of an affected individual has a one in two chance of being similarly affected. Tuberous sclerosis features café-au-lait spots, adenoma sebaceum, and other benign cutaneous tumors along with cerebral gliomas and rhabdomyomas of the heart. Another autosomal dominant condition, the basal cell nevus syndrome, by definition, is associated with recurrent, multifocal basal cell carcinomas and, peculiarly, with gliomas and medulloblastomas of the central nervous system. Both basal and squamous cell carcinomas regularly occur in xeroderma pigmentosum, an autosomal recessive condition in which the basic genetic lesion has been shown to reside in defective DNA repair; in epidermolysis bullosa dystrophica, and in the various hereditary forms of cutaneous albinism. Partial albinism is a facet of the autosomal recessive Chediak-Higashi syndrome which also comprises neutropenia, recurrent infection, and malignant lymphoma. Since the condition is recessive, parents of an affected child have a one in four chance of having another infant with the same condition. The presence of multiple sebaceous cysts, lipomas, and osteomas herald the presence of Gardner's syndrome, an autosomal dominant disorder in which multiple polyposis of the colon, a pre-malignant lesion, is virtually always present. Rarely, the osteomas will degenerate into osteosarcomas. Polyps of the small rather than the large bowel are regularly seen with the Peutz-Jegher's syndrome. Here the polyps have the character of hamartomas and cause difficulty by obstruction or intussusception; rarely are the lesions truly malignant. However, ovarian carcinomas have been frequently reported in this condition and consideration should be given to this diagnostic possibility in an affected female patient.<sup>3</sup> Pigmented spots on the lips and oral mucosal are the cutaneous hallmarks of this autosomal dominant disease. Pigmented lesions elsewhere should suggest the possibility of malignant melanoma. Probably about five per cent of patients with melanoma have the familial type lesion, which is inherited as an autosomal dominant, tends to be multifocal in origin, and becomes clinically apparent as a malignancy at an earlier age than the sporadic lesion.<sup>4</sup>

Neuromas of the conjunctival, buccal and labial mucosa may be seen with the syndrome of medullary thyroid carcinoma and pheochromocytoma.<sup>5</sup> Telangiectasia of exposed areas are common in ataxia-telangiectasia, and in Werner's and Bloom's syn-

dromes. The former condition is generally classified as an immunodeficiency disease and lymphoreticular malignancies are regularly seen; however, both cerebral and ovarian tumors have also been described.<sup>6</sup> Patients with Werner's syndrome (adult progeria) are prone to develop both soft tissue and bony sarcomas anywhere throughout the body.<sup>7</sup> Children with Bloom's syndrome have telangiectatic erythema of sun-exposed areas, a high frequency of spontaneous chromosome breaks, and an increased incidence of leukemia. All these conditions are inherited as simple autosomal recessives. One form of hereditary hyperkeratosis of the palms and soles (tylosis) is associated with squamous cell carcinoma of the esophagus.<sup>8</sup> Miscellaneous other tumors, both benign and malignant, have been reported in numerous members of some families; *e.g.*, multiple skin leiomyomas,<sup>9</sup> generalized lipomatosis,<sup>10</sup> and Kaposi's sarcoma.<sup>11</sup> However, the genetic aspects of these various lesions remain problematical at present.

### Central Nervous System

Mention has already been made of the central nervous system manifestations of von Recklinghausen's disease, tuberous sclerosis, and the basal cell nevus syndrome. Another of the autosomal dominant neuroectodermal dysplasias, the von Hippel-Lindau syndrome, features hemangioblastomas of the cerebellum and retina. Malignant melanoma may involve the retina on occasion, and some workers feel that the ocular and cutaneous forms of this disorder are distinct. Retinoblastomas may be familial, particularly when bilateral, and follow an autosomal dominant pattern of inheritance.<sup>12</sup> A strong association between retinoblastoma and abnormalities of the D group chromosomes has been found, and it is possible that the mutant gene for hereditary retinoblastoma may be located on one of these autosomes. It is of interest that a greater than expected incidence of second primary tumors has been found in children with retinoblastoma. Another ocular lesion, aniridia (absence of the iris) occurs in conjunction with congenital hemihypertrophy and nephroblastoma (Wilms' tumor).<sup>13</sup> Although a dominant form of aniridia probably does exist, the type that occurs with the Wilms' tumor appears to be sporadic. The abnormality presumably resides in defective early embryonic differentiation.

Gliomas and other types of brain tumor have been reported in multiple members of some families, and although controversy exists, the tendency for the lesions to be histologically identical within a family and the similar age of onset argues in favor of a simple genetic mechanism for at least some cerebral neoplasms.<sup>14-16</sup> Acoustic neuromas may occur as part of generalized neurofibromatosis or as an indepen-

dent autosomal dominant entity.<sup>17</sup> As is the case with other hereditary tumors, the familial form tends to be bilateral. Although not strictly central nervous system lesions, neuroblastomas<sup>18</sup> and carotid body tumors<sup>19</sup> may on rare occasions show an impressive familial aggregation.

### Gastrointestinal System

Familial aspects of gastrointestinal disease have been comprehensively reviewed.<sup>20</sup> Insofar as malignant disease of the gastrointestinal system is concerned, the most striking family history is often obtained when colon polyposis is encountered. In addition to Gardner's syndrome, other forms of familial colon polyposis have been described and it seems likely that a number of different hereditary forms exist. As with other familial tumor syndromes, the lesions are multiple, occur relatively early in life, and universally become malignant. Lynch and co-workers have described certain "cancer families" in which they found numerous members affected with adenocarcinoma usually of colon, stomach, prostate, ovary, breast, and uterus.<sup>21</sup> Multiple primary malignancies in various individuals were not infrequent within these families and, in contrast to the usual patient with multiple primaries, the age of onset of the neoplastic lesion tended to be relatively early. Some families apparently have a generalized predisposition to malignancy, and this predisposition may be inherited as an autosomal dominant trait with decreased penetrance and much intrafamilial variability. Exactly what the inherited abnormality is remains unknown, and it may be simply an increased susceptibility to an environmental agent such as an oncogenic virus.

With the exception of some members within the "cancer families," the incidence of carcinoma of the stomach is declining in the Western World. An association has been noted by some investigators between blood group A and gastric malignancy. The meaning of this association is not known, since genetic linkage is not involved and the overall frequency of blood group A individuals affected with stomach cancer is low. Carcinoma of the pancreas may occur as a complication of hereditary pancreatitis or as one aspect of the Zollinger-Ellison syndrome. The ulcerogenic component of this latter disorder is due to excessive quantities of gastrin elaborated by the benign or malignant pancreatic tumor. The pancreatic neoplasm arising in connection with pancreatitis is usually acinar, whereas that with the Zollinger-Ellison syndrome is islet cell in origin. The Zollinger-Ellison syndrome is but one facet of the autosomal dominant condition known as multiple endocrine adenomatosis.<sup>22</sup> Hepatoblastomas<sup>23</sup> and hepatomas<sup>24</sup> have been reported in some fam-

ilies. The former lesion is similar to Wilms' tumor and neuroblastoma in that it represents defective embryonic differentiation; the latter lesion may be a residual of chronic active hepatitis in those patients with persistent hepatitis-associated antigen, perhaps because of a familial deficit in the immune mechanism.

### Cardiorespiratory System

Tumors of the heart and great vessels, exclusive of the tuberous sclerosis complex, are exceedingly rare and no convincing demonstration of a familial tendency has been forthcoming. Similarly, genetic factors operational in carcinoma of the lung have been difficult to identify, primarily for the reason that the tumor type is so common in the general population. However, epidemiologic studies are compatible with at least a partial genetic component. Lilienfeld has suggested that genetic factors interact with the environment, predominantly a positive smoking history, in a multiplicative rather than additive fashion.<sup>1</sup> Unfortunately, most studies are retrospective and, as such, are subject to the usual bias. Carcinoma may complicate pulmonary interstitial fibrosis, an autosomal dominant condition.<sup>25</sup> Bronchial carcinoid may be found in some members of families in which familial multiple endocrine adenomatosis is segregating.<sup>5</sup> Rare familial occurrences of upper airway malignancies, such as nasopharyngeal and laryngeal carcinomas, have been reported, but so infrequently as to be possibly coincidental.<sup>26, 27</sup>

### Urinary System

Hypernephromas may be part of tuberous sclerosis and the von Hippel-Lindau syndrome, or may occur in independent familial settings.<sup>28</sup> However, so few affected families have been reported that neither single factor nor polygenic inheritance can be excluded. Similarly, malignant bladder tumors<sup>29</sup> and carcinoma of the ureter<sup>30</sup> have been noted in multiple members of some families, but the importance of genetic factors in the etiology of either of these malignancies remains to be assessed. Although not all workers should agree, there appears to be an increased frequency of embryonic tumors in children with congenital malformations.<sup>31, 32</sup> For example, Wilms' tumor should be suspected in any child with ambiguous external genitalia, since malformations of the urinary tract are often found in concert with pseudohermaphroditism. Wilms' tumor is a feature of the Beckwith-Wiedemann syndrome (macroglossia, omphalocele, gigantism and organomegaly), an autosomal recessive disorder.<sup>33</sup> Usually, the embryonal tumors are sporadic, but Wilms' tumor has been seen in sibs and in collateral relatives suggest-



ing that at least some forms of the tumor, particularly the bilateral type, may be simply inherited.<sup>34</sup>

### Musculo-skeletal System

Osteogenic sarcomas may complicate Paget's disease, an entity that many clinicians feel is inherited as an incompletely penetrant autosomal dominant disorder, and familial multiple exostoses, another disorder well-recognized to be inherited as an autosomal dominant.<sup>35</sup> Osteogenic sarcoma has been reported with Werner's syndrome with neurofibromatosis, and with Gardner's syndrome. Occasional families with isolated osteogenic sarcoma,<sup>35</sup> chondrosarcoma,<sup>36</sup> and even reticulosarcoma<sup>37</sup> have been described, but no convincing evidence has been offered for a significant genetic component in the pathogenesis of most bony tumors. One might expect that, analogous to other familial tumors, patients with multifocal sarcomas might have a positive family history more frequently than individuals with an isolated lesion. Sarcomas, of a variety of soft tissues but primarily rhabdomyosarcomas, have also been found to be more prevalent in children with congenital malformations in some series.<sup>38</sup> The children with soft tissue sarcomas also had parents and other relatives affected with a wide variety of neoplasms, generally as early as the third and fourth decades, raising the possibility of another type of "cancer family" syndrome.<sup>39</sup>

### Endocrine System

There are two well-defined endocrine neoplasia syndromes termed, appropriately enough, multiple endocrine adenomatosis (MEA), types I and II.<sup>5, 22</sup> MEA I comprises adenomas or adenocarcinomas of the pituitary, parathyroid, pancreas, adrenal cortex, and perhaps the thyroid follicular cell. Any or all of the various tumors may show hyperfunction. As mentioned previously, both Zollinger-Ellison and the carcinoid syndromes are part of this symptom complex. The islet-cell tumors and more uncommonly the adrenal cortical tumors, are likely to behave in a malignant, *i.e.*, metastasizing, fashion.

MEA II involves tumors of the adrenal medulla (pheochromocytoma) and the thyroid parafollicular cell (medullary thyroid carcinoma). Parathyroid adenomas may be seen with the type II syndrome as well, but in this case the adenoma is secondary to excessive secretion of the calcium-lowering hormone, calcitonin, by the medullary thyroid tumor with compensatory parathyroid hyperplasia. Both these tumor syndromes are inherited as autosomal dominants. Sensitive radioimmunoassays for calcitonin have been developed, and have led to the detection of affected, asymptomatic relatives with MEA II. Hereditary forms of hyperparathyroidism have been reported in a number of families, but some question

exists as to whether or not this glandular hypertrophy might be merely a part of the MEA syndromes. Similarly, familial cases of Cushing's syndrome have been reported, but these are also probably just a variably expressed facet of MEA, type I. Adrenal cortical carcinoma may be part of the Beckwith-Wiedemann syndrome and the hemihypertrophy-aniridia-Wilms' tumor complex. Pheochromocytomas, usually bilateral and often extra-adrenal, may be inherited as an autosomal dominant defect independent of MEA II and the various hereditary neuroectodermal defects.

Malignant gonadal tumors may be seen with gonadal dysgenesis, both of the familial and sporadic types, and with the testicular feminization syndrome. Malignant degeneration is a potential hazard in any syndrome, genetic or chromosomal, involving unoperated cryptorchidism after puberty. Ovarian neoplasms have been seen in some families in sibs, in other families over multiple generations, and in still other "cancer families" in which other types of carcinoma have been found.<sup>30</sup> It seems likely that single factor or simple Mendelian inheritance might be operating in a few families, whereas in others the pathogenesis of the neoplasm may be multifactorial. Unfortunately, in most epidemiologic surveys, little attempt is made to separate out those families in which single gene defects might be of paramount importance.

Although the breast is not an endocrine organ, its development and physiological function are so tied to hormonal action that it seems worthwhile to consider breast cancer with this system. Multiple instances of breast carcinoma have been recorded in families on a number of occasions.<sup>40-42</sup> The familial cases tend to have an earlier age of onset, and are more frequently bilateral. Breast cancer has been commonly seen in women within "cancer families," and an increased incidence has also been noted in the female relatives of children with embryonal tumors. In view of the fact that breast cancer is one of the leading causes of death in American women, it seems imperative to quantitate the genetic contribution to the pathogenesis of the disease. A three to five-fold or more increased risk of developing this malignancy in first degree female relatives might warrant early prophylactic surgery, at least in some families. Obviously, more work will be required before such an heroic step can be advocated, but preliminary data is highly suggestive that genetic factors may be of considerable importance in the etiology of breast cancer.

### Reticuloendothelial System

Considerable controversy surrounds the genetic aspects of leukemia and lymphoma. The literature is

replete with reports of families containing more than one member affected with these malignant diseases. Large population surveys performed by reliable investigators have come to widely divergent conclusions in regard to the importance of inheritance in the causation of leukemia.<sup>43-46</sup> Much of the difficulty probably arises from a relative inability to subclassify the myeloproliferative diseases. For example, chronic myelogenous leukemia seen in infancy appears to be clinically different from that observed in adult life.<sup>47, 48</sup> Moreover, the childhood type may be simply inherited, whereas the adult variety probably is dependent upon multiple factors, only some of which may be genetic. Twin studies also have been confusing. Concordance for acute leukemia is greater in monozygotic than dizygotic twins, but the absolute rate is low in both.<sup>43</sup> Even between monozygotic twins, concordance has been shown to decrease with increasing age, rendering interpretation of twin data even more difficult.<sup>49</sup> It is quite conceivable that the leukemia-lymphoma group of malignancies is heterogeneous, with some types strictly genetic, others wholly environmental, and the majority multifactorial. Even in those types where genetic factors are shown to be of importance, the heritable lesion may reside in a defective immune system that renders the host overly susceptible to an oncogenic virus. We know that children, and in some cases adults, with regularly inherited immunodeficiency diseases may develop reticuloendothelial malignancy. Ataxia-telangiectasia and the various forms of hereditary hypogammaglobulinemia are associated with an increased risk of developing lymphoma. Reticuloendothelial malignancy has been reported in consanguineous siblings, features strongly suggestive of autosomal recessive inheritance.<sup>50</sup> It is conceivable that the reticuloendothelial malignancy in these families is not primary but is the end-result of over-compensation by a defective immune system. Multiple myeloma and Hodgkin's disease have been seen in more than one family member on occasion, but the findings may be coincidental since both diseases are relatively common.

Much has been made of the relationship between various chromosome anomalies and leukemia. Children with Down's syndrome (trisomy 21) have long been known to have an increased incidence of leukemia. The Philadelphia chromosome (Ph'), a deletion or loss of the long arm of one of the G group (21 and 22) chromosomes, often seen with the adult form chronic myelogenous leukemia, is unusual in the infantile myeloproliferative syndrome. The Christchurch chromosome (Ch'), a deletion of one of the short arms of a G group chromosome (probably 22), has been suggested to predispose the bearer to chronic lymphatic leukemia.<sup>51</sup> These findings would seem to indicate that the G group chromo-

somes carry genes important to orderly leukopoiesis. The function of these genes unfortunately remains enigmatic. Chromosome breaks are regularly seen in Fanconi's syndrome (panmyelopathy and abnormalities of the radius); Bloom's syndrome; in an hereditary form of congenital non-spherocytic hemolytic anemia secondary to deficiency of the enzyme glutathione reductase; and in ataxia-telangiectasia.<sup>52</sup> All of these disorders are inherited as autosomal recessives, and all show an increased incidence of leukemia. Most authorities feel that the mutant genes predispose both to chromosome breaks and leukemia, but a cause and effect relationship between the cytogenetic abnormality and leukemia has not been completely excluded. Chromosome abnormalities have been seen in patients with Waldenstrom's macroglobulinemia and in their clinically normal relatives who may have paraproteinemia, but again, a cause and effect relationship remains problematical.<sup>53</sup>

## Conclusion

It is obvious from this brief discussion that much remains to be learned about genetics and neoplasia. It should be equally obvious that heritable factors are of considerable importance in some cancers, and indeed may be paramount in a few. Close cooperation between the oncologist and the geneticist should foster a better understanding of the relationship between defective gene action and the development of malignancy. Only with such cooperation can the requisite data be accumulated that will enable the practicing physician to identify the high-risk patient and the high-risk family before the onset of unalterable disease. Even with the advent of new and better modes of treatment, the use of preventive techniques will continue to be of considerable importance. The study of genetic aspects of malignant disease will undoubtedly provide us with a powerful tool for future therapy.

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# New Neuroradiologic Techniques

## *The Mimer III and Rotating Chair-Table*

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THE DIAGNOSTIC accuracy required for different neuroradiological procedures is well known and has led to developments in neuroradiological equipment such as the Mimer III and the rotating chair-table.<sup>1, 2</sup>

The Mimer III is characterized by a U arm which carries the radiographic tube at one end and the film cassette and image intensifier in the other end (*Figure 1*). The arm is provided with tomographic movement. The complete unit is ceiling suspended and can rotate 360 degrees. The vertical adjustment is carried out by means of a telescopic limb. All these features have proved to be highly desirable for the various modern neuroradiologic procedures, particularly pneumography.

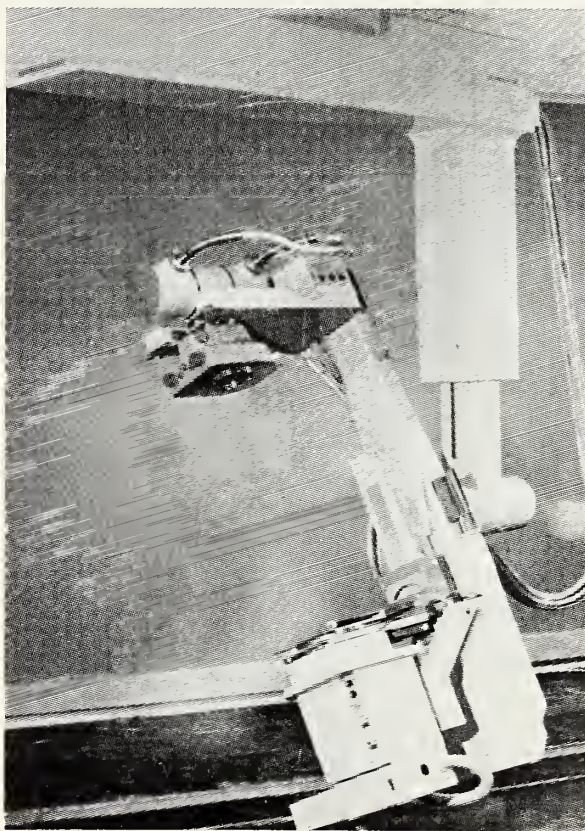
With fluoroscopy permanently available in the unit, it is possible to control the amount of injected gas for pneumography. Different structures of the ventricular system and subarachnoid space are filled selectively, and the proper moment for film exposure is easily determined. Instant fluoroscopic control also permits optimum projections and positions of the patient during the examination. With tomography instantly available, coronal and sagittal tomographic sections can be obtained of any area of the brain, in any projection, and with the patient in any position.

The position of the patient plays a very important role in determining the distribution of air or opaque medium in various intracranial spaces during pneumographic studies. When simultaneous filling of symmetrical structures is desired, rotation of the patient about his transverse axis should be carried out. This is the situation, for example, when bilateral filling of the temporal horns is necessary. The rotating chair-table has been designed for these maneuvers (*Figures 3A, B, and C*). The patient in the rotating chair can be adjusted in a vertical, longitudinal, or transverse direction. The chair can also rotate forwards and backwards, including a complete somersault in either direction. The patient can be placed

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A new diagnostic neuroradiologic unit, the Mimer III with rotating chair-table, introduced originally in Sweden, has substantially improved a variety of procedures including pneumoencephalography. Additional information from posterior fossa cisternography, gas myelography, and posterior fossa angiography has been significantly facilitated during first year's use at KUMC.

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*Figure 1. A general view of the Mimer III.*

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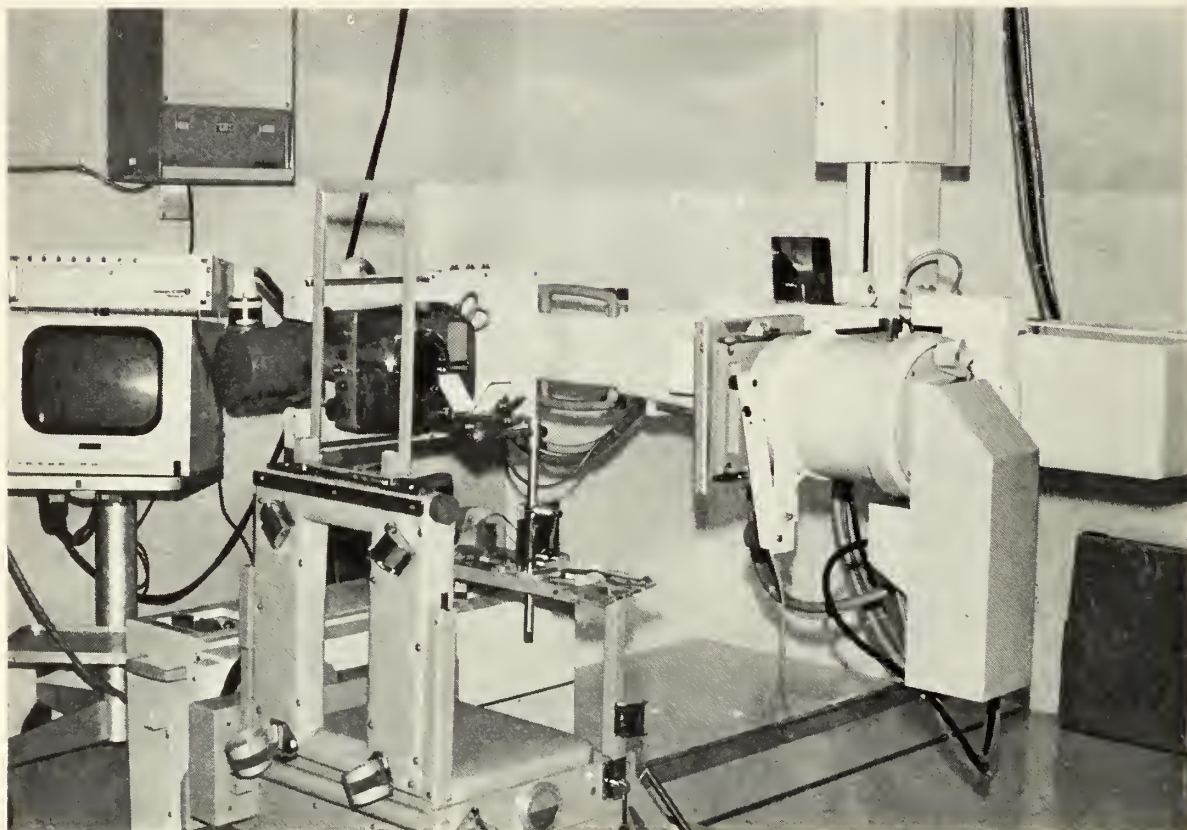


Figure 2. Mimer unit with the chair in upright position ready to initiate a pneumoencephalographic examination. Note the chin support for fixation of the head. Fluoroscopy with image intensification and tomography is instantly available.

in any desired position. The chair can be converted to a flat table at the end of the examination for easier movement of the patient.

The first Mimer III unit and rotating chair has been in clinical use in the neuroradiology section at the University Hospital in Lund, Sweden for over four years.<sup>3</sup> We have had satisfactory experience with the same equipment at the University of Kansas Medical Center for over a year. Based upon our experience, we have found the need to make some modifications in the chair. The original forehead support has been replaced by an adjustable chin support (Figure 2). The head can rest more comfortably and be fixed more firmly with straps extending from a cap covering the vault of the head. This device also permits better control of flexion of the head and alignment in sagittal plane. Optimum positioning is achieved without unfastening the head. This new chin support is based on an autotomographic device for pneumography described by Davidson and Clark.<sup>4</sup>

The Mimer in combination with the modified rotating chair allows cerebral pneumography to be performed easily and comfortably in a shorter period of time. With the patient in the same sitting posi-

tion during the entire examination, and positioned only by moving the chair, the needle of the lumbar puncture can remain in place for the entire examination (Figures 3A, B, and C). This facilitates the repeated injections of gas under fluoroscopic control whenever necessary. In addition, if the patient faints, the examination does not need to be discontinued. By tilting the chair backwards, and without removing the needle, the head is placed below the level of the body until the fainting episode is over. Then the chair is brought back to the original position and the examination continued. This feature also simplifies the procedure when it must be performed under general anesthesia.

With the Mimer and rotating chair, tomography during pneumography has become routine. This is essential for definition of different structures, particularly those that are centrally located (Figures 4 and 5). The demonstration of the temporal horns of the lateral ventricles are filled simultaneously by a complete forward somersault. Anatomic detail is greatly aided by tomographic sections in the coronal plane (Figures 6A and B). Initially, complete somersault was restricted to young patients. We have found that elder people tolerate this portion of the

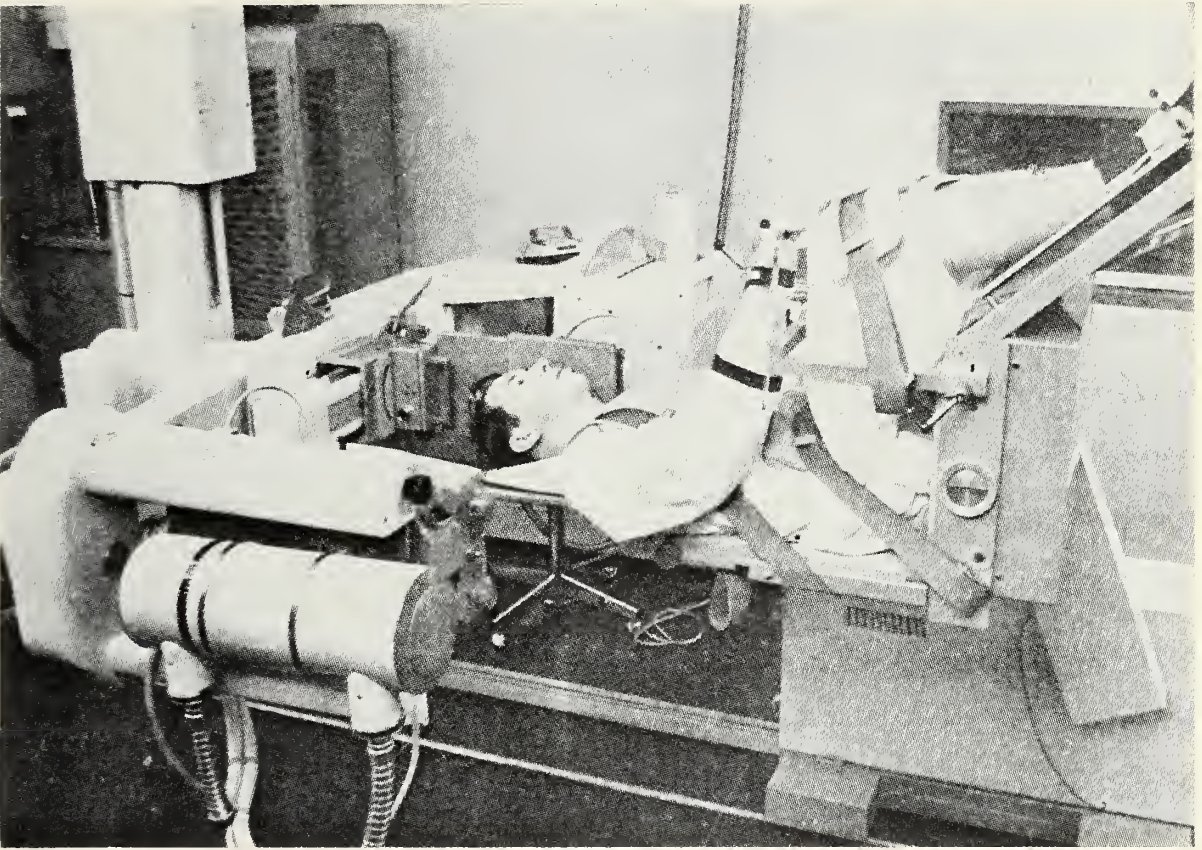


Figure 3A

examination just as well, and in our opinion age is not a contraindication.

In the past, ventriculography was a cumbersome procedure. It was difficult to demonstrate the posterior portion of the third ventricle, aqueduct, and fourth ventricle simultaneously. This is now easily accomplished with the Mimer III and rotating chair by backward somersault with the aid of tomographic sections.

The characteristics of the Mimer III may fulfill other clinical uses for conventional radiography and fluoroscopy, such as percutaneous cervical cordotomy and cranial nerve block. Posterior fossa cisternography using oily contrast medium, in the diagnosis of small posterior fossa lesions, especially in the cerebellopontine angle, has also been greatly facilitated with this new equipment. If desired, the cassette holder and image intensifier may be swung to the side when the U arm is in the vertical position, permitting the placement of a patient on a stretcher or bed to have plain roentgenography performed. Film changers for angiography may also be used.

The Mimer III and rotating chair-table has also been designed to be used for gas myelography. For this examination, the chair is converted into a table

(Figure 7). Gas myelography has been widely used in Europe, particularly in Sweden.<sup>5</sup> Although this procedure has not gained wide acceptance in this country, we feel that this technique has advantages particularly for expanding processes in the thoracic and cervical cord region (Figures 8A and B).

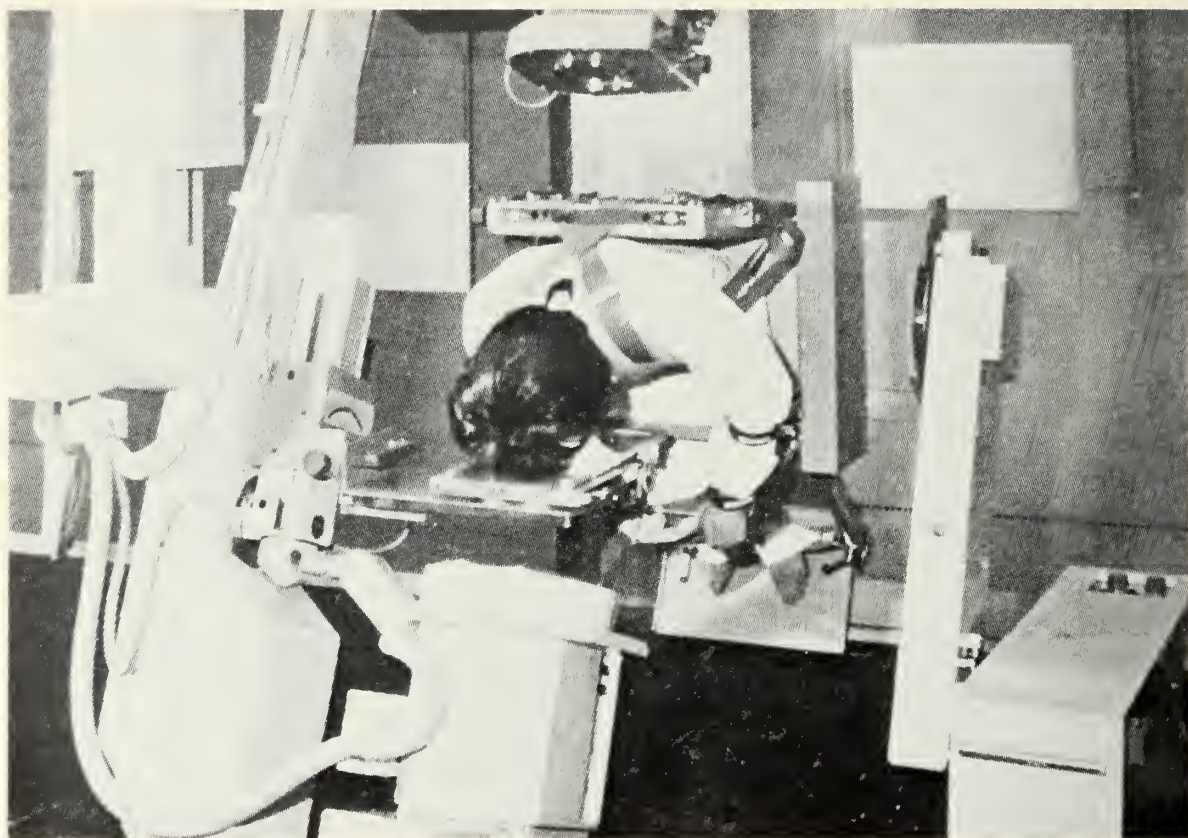
The tomographic features of the Mimer III have also enhanced angiographic studies of the posterior fossa. Angiotomography may demonstrate some vessels, particularly in the midline not seen with conventional techniques, by elimination of overlying vessels and bone (Figures 9A and B).

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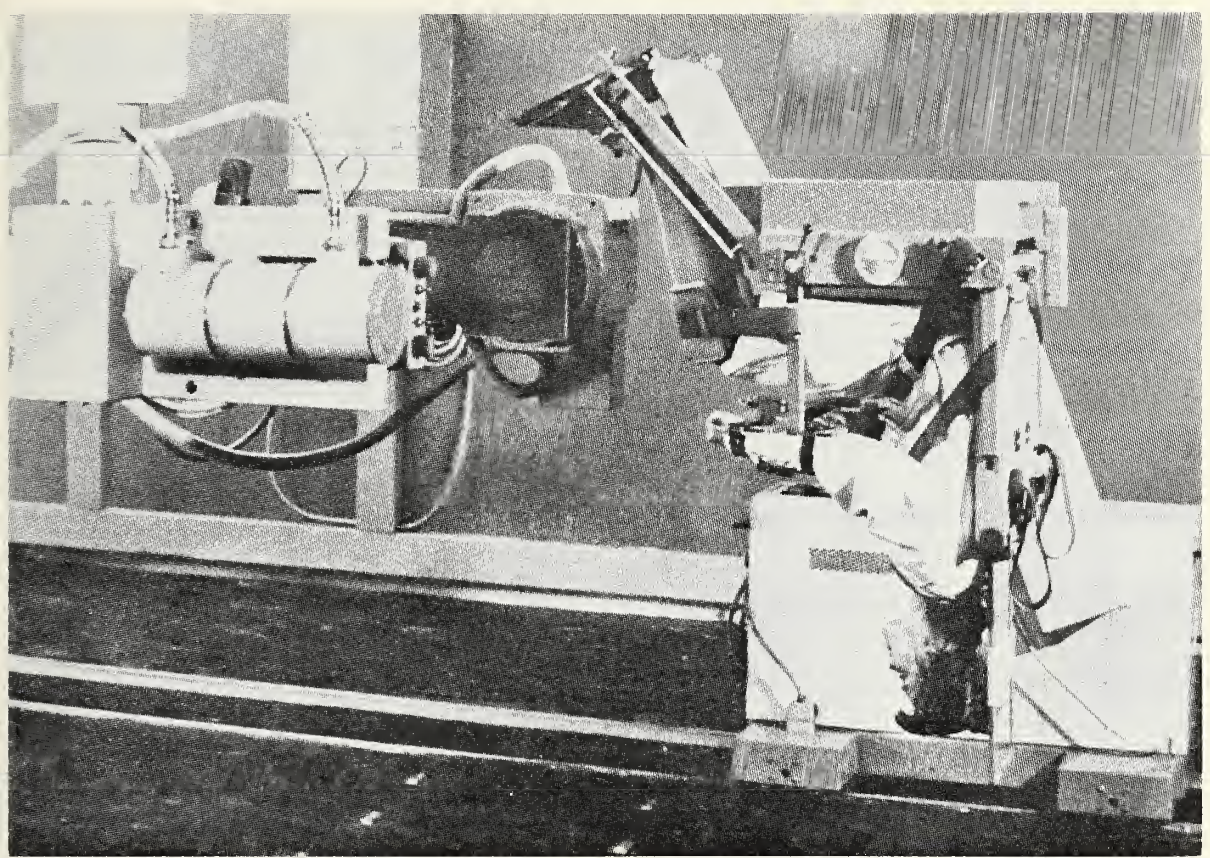
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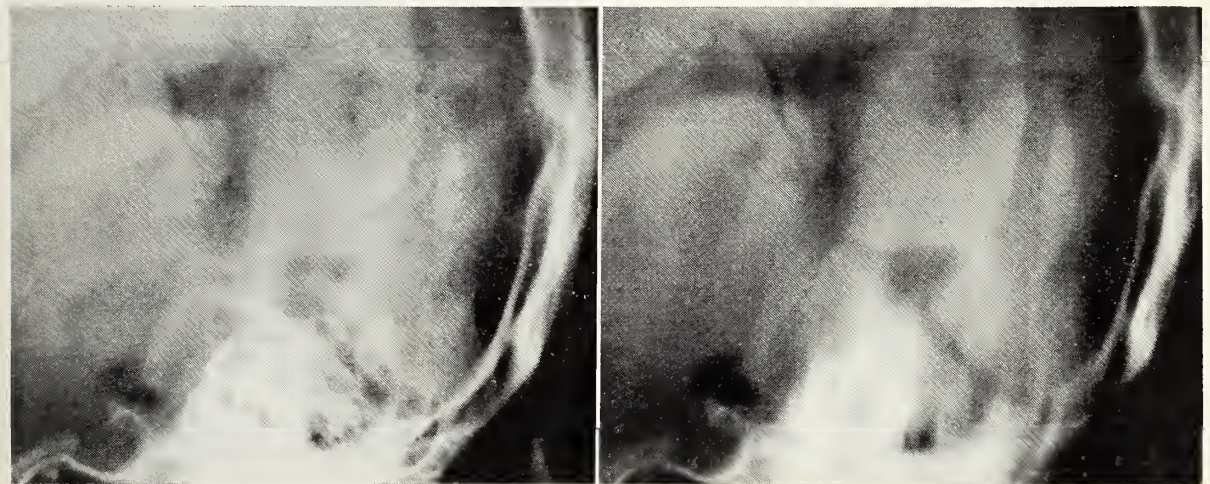
*Figure 3B**Figure 4A**Figure 4B*

*Figure 4.* Lateral view of the posterior fossa, in the first stage of a pneumoencephalogram. A) Conventional technique. B) Midline tomographic section revealing the ventricular system and cisterna magna with better detail.



*Figure 3C*

*Figure 3.* Patient during a pneumoencephalographic study. A) In brow up position for lateral projection. B) In brow down position for posteroanterior projection. C) Patient during forward somersault.

*Figure 5A**Figure 5B*

*Figure 5.* Lateral view of the posterior fossa in another case after injection of gas in the subarachnoid space. A) Conventional radiograph. B) Midline tomographic section showing better detail of the ventricular system and outlining of the cerebellum and brain stem.



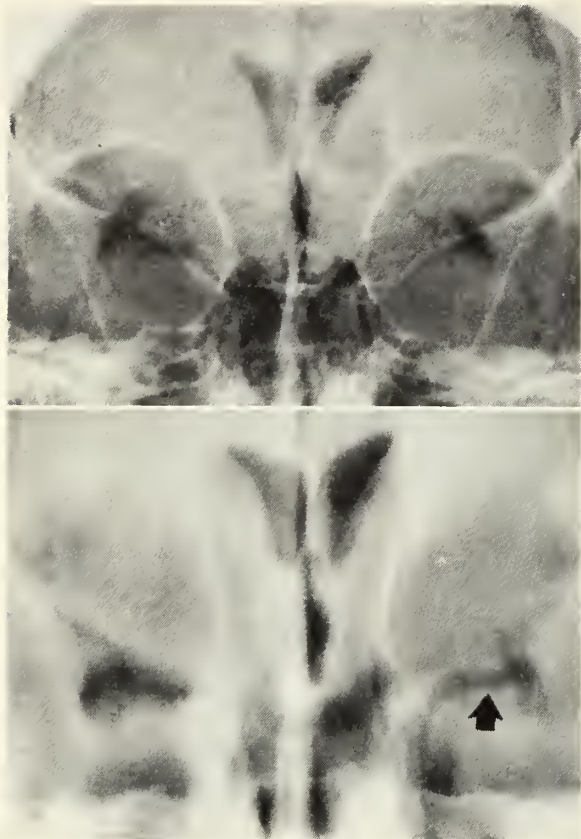


Figure 6. Anteroposterior projection of a pneumoencephalographic study, after forward somersault with bilateral filling of the temporal horns. A, top) Conventional radiograph. B, bottom) Tomographic section through the mid portion of the temporal horns, revealing a pathological distortion of the left horn (arrow) which was not evident on the conventional film.

### Summary

A new diagnostic neuroradiologic unit, the Mimer III with rotating chair-table, introduced originally in Sweden, has substantially improved a variety of procedures including pneumoencephalography. Additional information from posterior fossa cisternography, gas myelography, and posterior fossa angiography has been significantly facilitated during first year's use at KUMC.

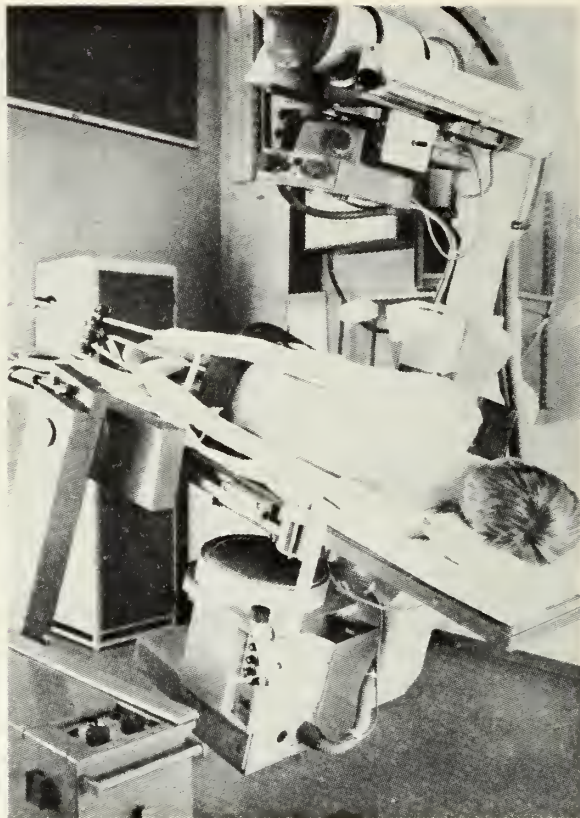


Figure 7. Patient during gas myelography, in position for tomographic sections.



Figure 8. Gas myelogram, demonstrating with the aid of tomography, excellent visualization of A, left) the cervical cord and B, right) thoracic cord.

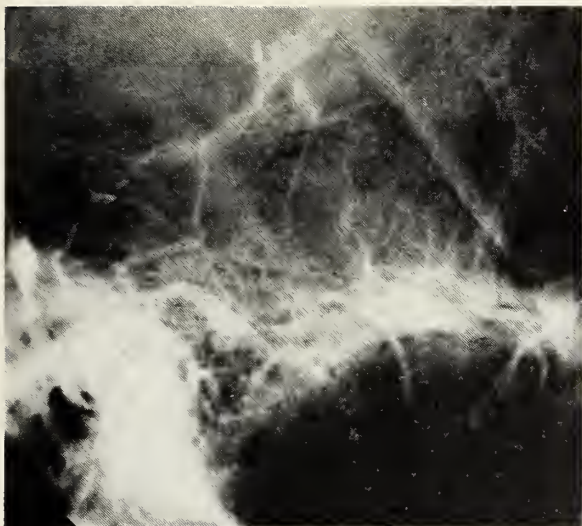


Figure 9A

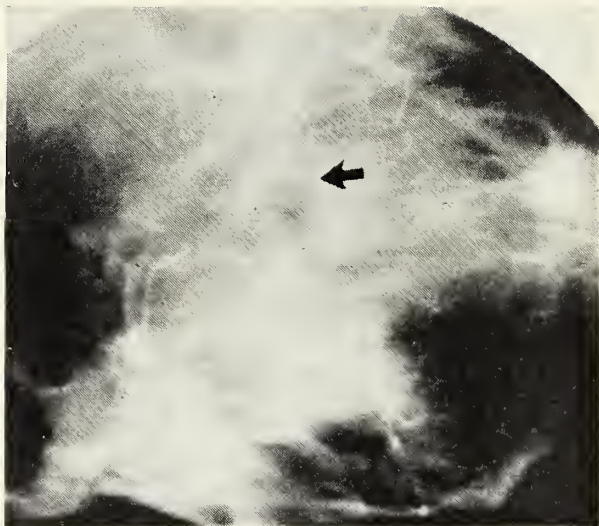


Figure 9B

Figure 9. A) Conventional posterior fossa angiogram in the venous phase. B) Midline angiotomogram carried out on the Mimer III, demonstrating the midline structures at better advantage, particularly the precentral vein (arrow) which could not be identified before, because of superimposed vessels.

## 24th Annual

## MIDWEST CANCER CONFERENCE FOR PHYSICIANS

"CANCER PROGRESS IN THE 70'S"

Denis P. Burkitt, M.D., F.R.C.S.E.—Medical Research Council External Scientific Staff of Uganda, Africa, and London, England. *Lessons From Africa for Diseases in America*, Friday, 10:00 a.m., and *Epidemiology of Cancer of the Large Bowel*, Saturday, 9:15 a.m.

Elisabeth Kubler-Ross, M.D.—Chicago, Illinois, International Consultant in Care of the Dying Patients and Their Families. *The Care of the Dying Patient*, Saturday, 10:00 a.m.

Melvin Tefft, M.D.—Boston, Mass., Associate Radio Therapist, Massachusetts General Hospital of Boston. *Radiotherapeutic Management of Pediatric Malignancies with Special Reference to Wilms' Tumor and Neuroblastoma*, Friday, 8:30 a.m., and *Recent Advances in Pediatric Oncology: Our Present Understanding Concerning Secondary Effects of Irradiation on Normal Tissue in the Normal Child*, Saturday, 8:15 a.m.

Tague C. Chisholm, M.D.—Clinical Professor, Division of Surgery, University of Minnesota. *Tumors—The Number Two Killer of Children*, Friday, 9:00 a.m., and *Cervical Swellings in Infancy and Childhood*, Friday, 4:15 p.m.

Sharad D. Deodhar, M.D.—Cleveland, Ohio, Scientific Director, Immunology and Staff Member, Cleveland Clinic Foundation. *Experimental Studies*

*of Tumor Immunity*, Friday, 9:30 a.m., and *Clinical Studies of Tumor Immunity*, Friday, 2:00 p.m.

William R. Roy, M.D., J.D.—Topeka, Kansas, United States Congressman, 2nd District of Kansas. *The Financing of Health Care*, Saturday, 11:30 a.m.

Richard Alan Oberfield, M.D.—Boston, Massachusetts, Associate Director Cancer Research, Lahey Clinic Foundation of Boston. *Ambulatory Arterial Infusion Chemotherapy for Advanced Solid Tumors*, Friday, 10:45 a.m., and *Ambulatory Arterial Infusion Chemotherapy for Liver Cancer*, Friday, 3:15 p.m.

John S. Stehlin, M.D.—Houston, Texas, Clinical Associate Professor of Surgery, Baylor University College of Medicine. *Treatment of Melanoma and Sarcoma of the Extremity*, Friday, 11:15 a.m., and *Palliation for the Patient with Advanced Cancer*, Friday, 2:30 p.m.

Donald A. Shumrick, M.D.—Cincinnati, Ohio, Professor and Chairman of the Department of Otolaryngology and Maxillofacial Surgery, University of Cincinnati. *New Management for an Old Malignancy—Treatment of Carcinoma of the Tonsil*, Friday, 3:45 p.m., and *Cosmetic and Physiological Reconstruction of the Head and Neck Cancer Patient*, Saturday, 8:45 a.m.

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# M and T Types

## *Isolation of Group A Streptococci at KUMC*

FRED C. BROWN, M.D. and ANTONI M. DIEHL, M.D.,\*

*Kansas City, Kansas*

THE FIRST FIVE consecutive group A beta hemolytic streptococcal cultures which arrived in the bacteriology laboratory each month in each of the following categories were included in the study: pharyngitis, otitis media, wound infection, and asymptomatic carriers. The beta hemolytic streptococci were screened for inclusion in Lancefield's group A by the use of the bacitracin disc sensitivity technique. This method was highly accurate in this study since only seven of the 398 organisms (98 per cent) upon serological typing were found to be in groups C or D. Pertinent clinical and epidemiological data, such as the use of antibiotic therapy, were obtained from each patient's records.

### Results

There were 398 positive specimens secured from this center during the course of the two-year study. Of these specimens, approximately 62 per cent were not typable with the anti-M sera available. This percentage of non-typability of the M antigen is not unusual due to the lability of the M protein in culture.<sup>1</sup> Cultivation in an acid medium, such as that produced by the fermentative metabolic processes of the streptococcus, favors the loss of the M protein due to the enhanced production of streptococcal proteinase. Also, the spontaneous occurrence of a new M strain for which no antisera is available may serve to explain a small percentage of the non-typable organisms.

Of those organisms which were typable, 20 different M types were encountered out of the 58 for which antisera were available. The largest aggregation was type 12, which accounted for 16 per cent of the typable organisms. This is of particular clinical significance because of the high frequency of association of infection with this organism and the sequela of glomerulonephritis.<sup>2</sup> Because of the limited specimens obtained each month, no significant conclusions as to the seasonal occurrence of the various types was possible.

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Data on the incidence of the M and T types of pathogenic streptococci isolated from patients with various manifestations of streptococcal infection was lacking. For this reason in February, 1968 the Streptococcus Unit of the United States Public Health Service's National Communicable Disease Center began a systematic study of the M and T types of streptococci isolated in 20 centers located in various parts of the United States. The purpose of this study was to collect data on the type and distribution of streptococcal organisms from various disease entities including scarlet fever, pharyngitis, impetigo, and other streptococcal diseases in order to provide the information necessary for the development of effective programs for the prevention and control of streptococcal diseases and their sequelae. The Kansas University Medical Center was chosen as one of the centers participating in this study, and this communication will report the results at this center from February 1, 1968 to March 1, 1970.

---

The typing was accomplished by the use of an acid and heat extracted solution of a pure culture of group A beta hemolytic streptococci. An equal amount of the extracted solution, and of antisera prepared in rabbits inoculated with purified antigen for each type of M protein and absorbed with a heterologous serum to remove undesirable cross reactants, was drawn into a sterile capillary tube and allowed to incubate for two hours at 37 C followed by overnight refrigeration. The results were read the following morning as weak, moderate, or strong, based upon the amount of settling by the precipitate particles during the overnight refrigeration.

The T antigen differs from the M antigen in that it participates mainly in an agglutination reaction

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rather than a precipitin reaction, and that several different but immunologically related antigens may occur within the same organism. Sixteen per cent of the organisms encountered in the course of the study were not T typable with the available sera. A total of 19 different T antigens were encountered in the study. The T antigens tend to occur in immunologically related groups; however, those organisms which have more than one T antigen have only the T antigens from a single group. No organism with multiple antigens had antigens from more than one group. These groups and the percentage of their occurrence in this study are as follows:

Group	Types	Percentage
T	1, 3, 13, B 3264	29
U	2, 4, 6, 28	12
W	5, 11, 12, 27, 44	33
X	8, 14, Imp. 19, 25	12
Y	15, 17, 22, 23, 47	1
Z	9, 18, 19, 30	3

From the above table, it is apparent that the groups T and W comprise greater than 60 per cent of those specimens tested. The most common single T type encountered was type 12, which accounted for some 12 per cent of the total.

### Pharyngitis

The most common disease entity from which group A (bacitracin sensitive) beta hemolytic streptococci were isolated was pharyngitis, which comprised 32 per cent of the specimens. There was a somewhat increased incidence of the number of pharyngitis cases in the winter and spring months, but the nature of the sampling procedure of this study does not allow an accurate analysis of this impression. Only 12 different M types of organisms were isolated from the pharyngitis cases. The majority of these organisms were types 1 and 12, which comprised 56 per cent of the typable organisms; type 12 accounted for 31 per cent, and type 1 for 25 per cent. The T types of these organisms had a wider distribution, with 31 different combinations of T type organisms isolated. Ten per cent of these organisms had more than one T antigen present. In each case, these multiple T antigens were within a single immunologically related group. The most commonly occurring T type was type 12, which occurred in some 40 per cent of the organisms isolated from cases of pharyngitis. The other T types occurred with a lesser frequency and in a random distribution.

From the above data, it appears that the most common organism recovered from patients with streptococcal pharyngitis at the Kansas University Medical Center was one with an M type of 1 or 12, and a T type of 12. There is clinical significance to this find-

ing because of the known association of the M type 12 streptococcus and post-streptococcal glomerulonephritis. However, the renal sequelae of this type of organism occur with a much higher frequency following cutaneous infection than with pharyngeal infection<sup>3</sup> and, indeed, in those patients for which we have follow-up data on their renal status, there is no instance of documented glomerulonephritis following a M type 12 streptococcal pharyngitis.

### Impetigo

The second most common pathogenic process encountered in this streptococcal study was impetigo. Although there remains some controversy as to whether impetigo is primarily a streptococcal or a staphylococcal disease,<sup>3</sup> the disease process can be caused by both the streptococcus and by the staphylococcus and, perhaps, by both organisms in combination. However, for the cases included in this study, those cases in which only streptococci were isolated are considered.

Eighteen per cent of the organisms isolated during the study were associated with impetiginous infection. Of the organisms which were typable with the available antisera, the most commonly encountered M types were 41 and 43, which accounted for 30 per cent of the typable organisms. In contrast with the organisms isolated from the cases of pharyngitis, M type 12 was notably absent from the group of organisms isolated from cases of impetigo.

Eighteen different combinations of T antigens were encountered, and of these 12 were multiple, *i.e.* having two or more T antigens within a single organism. The T types predominating among organisms causing this disease were 3, 8, 12, 13 and 25, with no single type associated with more than ten per cent of the cases.

### Otitis Media

The third most commonly occurring streptococcal disease in this study was acute otitis media with ten per cent of the total cases. Although this disease entity could be included with that of pharyngitis, it was separated in this study because of its occurrence as the presenting symptom with little evidence of pharyngeal infection.

Seven different M types were found among those organisms causing otitis media. No definite predominance of any single group of M type organisms was noted in contrast with the organisms isolated from the pharyngitis and impetigo groups of patients. However, M type 12 was notable by its absence from this group of patients, again in contrast with the pharyngitis group. Unfortunately, the relatively small number of patients (40) in this group make this finding somewhat less significant than if

there had been a more equal numerical distribution of patients within the groups.

The T types of the organisms causing otitis media were scattered throughout 12 different types with three organisms having multiple antigens present. No significant predominance of any T type was noted in the samples evaluated.

### Wound Infections

Another large group of organisms were isolated from wound infections with some 50 cases encountered within the two-year study. The organisms with M types of 41 and 43 were most frequently isolated from infected wounds. Each of these types accounted for approximately 20 per cent of the cases which had typable organisms. Again, in contrast to the organisms from cases of pharyngitis, M type 12 was absent from this group of organisms. The fact that a similar distribution of M antigen occurs with impetigo and with wound infection implies that these organisms are, perhaps, preferentially associated with cutaneous lesions, and their relative absence from the group of organisms isolated from the pharyngitis and otitis media patients tends to substantiate this implication.

Eighteen different T antigen combinations were encountered within the group of organisms isolated from wound infections. Twelve of these organisms had two or more antigens present within the same organism. The most common T type combination encountered was the 3, 13 and B 3264 group, which occurred in 30 per cent of the organisms. No other group occurred with a frequency exceeding five per cent.

### Other Streptococcal Diseases

Several other disease entities had streptococcal organisms isolated from cultures during the course of the study. These included such diverse entities as vaginitis, urethritis, gastroenteritis, scarlet fever, and asymptomatic carriers. Too few organisms were isolated from each group to analyze them individually. However, the data from these organisms was included in the overall analysis of the M and T type distribution of the complete group of organisms typed during the study.

### Conclusions

In the analysis of the M and T antigen present in the organisms encountered during a two-year study of streptococcal disease at the Kansas University Medical Center, certain trends are evident. The first of these is the association of M types 1 and 12 with pharyngitis, but not with otitis media, impetigo, or wound infection. There is some clinical significance in this finding due to the statistical association of the occurrence of acute glomerulonephritis

following infection with M type 12 streptococcal organisms.

The second trend evident is the association of M types 41 and 43 with impetiginous lesions and with wound infections, and the notable absence of M type 12 from organisms cultured from these lesions. This suggests the possibility that organisms with these M types may have a predilection for causing cutaneous disease. If other centers which participated in this study substantiate this finding, then it may be of value in the treatment and prevention of streptococcal diseases and their late sequelae. However, no such trends were encountered with the T antigen, with the possible exception of the occurrence of types 3, 13 and B 3264 which are immunologically interrelated with wound infection. The lack of clear associations of the T antigens is expected since the T antigen is not known to be related in any way to the pathogenicity of or to the protection from streptococcal disease.

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## Medical Education—Minorities

(Continued from page 89)

handle the numerous individual problems and needs of our students. We are, indeed, thankful for our fruitful concern for minority student programs. We feel that our entire curriculum and counseling services have been of benefit.

### Summary

Throughout this brief discussion of some new and exciting programs at the University of Kansas Medical Center, I have attempted to highlight our activities of recruitment, enrichment, and retention of disadvantaged students in the health professions. The need for more of such practitioners in the health professions appears evident. The road ahead is neither clearly mapped nor easily followed. The faculty and administration of the Medical Center, however, feels the need for affirmative action and is dedicated to continue to provide well-educated and sympathetic health career professionals for the state of Kansas.

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# Effective Drug Use

## *Drug Utilization by the Practicing Physician*

**DANIEL L. AZARNOFF, M.D., JOHN DOULL, M.D., Ph.D.,  
ARYEH HURWITZ, M.D., EDWARD J. WALASZEK, Ph.D. and  
JESSE D. RISING, M.D.,\* Kansas City, Kansas**

THE CORRECT DIAGNOSIS is essential to proper therapy and physicians appear to be reasonably accurate in this aspect of their practice. However, the Department of Health, Education, and Welfare Task Force Report on Prescription Drugs has questioned their therapeutic ability to use drugs wisely and properly. In the not too distant past, most available drugs were natural products and of homeopathic effect. Today's drugs, however, are of great pharmacologic potency and represent a potential danger to the patient. It is no longer possible to prescribe drugs based on a memorized schedule of dosage and toxic effects. It is now essential for the physician to keep abreast of drug interactions as well as the pharmacogenetic and pharmacokinetic studies necessary to prescribe drugs rationally. It is equally important for those of us who purport to educate physicians about drugs to determine the most effective method of delivering this information to the physician on a continuing basis.

In order to determine the effectiveness of any method of disseminating information about drugs, we must know how the physician uses drugs in his everyday practice, not whether he can supply the proper answer to questions on an examination, even if it is designed to measure more than just his ability to recall information. The study to be reported here was undertaken to determine the feasibility of the use of a special prescription form to record the day-to-day prescribing habits of the participants. If such data can be readily and accurately obtained, the effectiveness of different methods of disseminating information about drugs can then be examined.

The prescription forms used in this study are bound in books containing 40-50 forms. The individual forms are similar to those regularly used by each physician. By utilizing no-carbon required paper, a second and third copy is made each time the physician writes a prescription. In addition, he records if the patient is male or female, and where the

prescription was written, *i.e.*, in hospital, office, patient's home, or was telephoned to the pharmacy without seeing the patient. Finally, he also records the indication for the medication on each form. The extra information which is required takes only a few seconds. The second copy is for the physician's files if he so desires. The third copy is returned to us at intervals. The physician's signature does not appear on the third copy and, although the letters denote a specific physician, his anonymity has been guaranteed and his identity will never be revealed. Similarly, as soon as the patient's demographic information is coded, the top of the form is removed and destroyed, so that the data can no longer be related to any individual by name.

From the information on the individual prescription form, we can answer such questions as:

1. What drug or drugs are used for what indication?
2. Is the preparation a single or multiple drug dosage form?
3. What percentage of drugs were prescribed by brand or generic name?
4. Do males and females receive essentially similar therapy for any one disorder?
5. Do specialists prescribe differently than generalists?
6. Do physicians in solo practice prescribe differently from those in group or other types of practice?
7. Are drugs utilized differently in one geographic area compared to another?
8. Do prescribing patterns change with time?
9. Can prescribing habits be changed and what is the most expeditious method to produce the changes?

The data on the prescriptions are coded and transcribed to cards for storage and computer evaluation. Programs have been written for data retrieval from a GE 360 computer (*Tables 1, 2, 3*).

Before undertaking a large scale study, the feasibility and problems of this type of data gathering

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TABLE 1  
PRESCRIPTION SURVEILLANCE STUDY  
DRUG USAGE REPORT

<i>Summary</i>	<i>No.</i>	<i>Per Cent</i>
Prescriptions Written .....	704	
At home .....	12	1.7
At office .....	367	52.1
At hospital .....	145	20.6
Other .....	180	25.6
Generic Names .....	78	11.0
Renewals .....	41	5.8
Combination of Drugs .....	204	28.9

TABLE 2  
PRESCRIPTION SURVEILLANCE STUDY  
DRUG USAGE REPORT

<i>Drug</i>	<i>Diagnosis</i>	<i>Symptoms</i>
Lasix	Arteriosclerotic heart disease	
	Congestive heart failure	
	Congestive heart failure	
	Renal heart disease	
Librium	Anxiety reaction	
	(5) Anxiety reaction	
	Arteriosclerotic heart disease	Anxiety
	(3) Arteriosclerotic heart disease	
	Chronic obstructive pulmonary disease	
	Congestive heart failure	
	Gastritis	Anxiety
	Gastritis	
	Hypertensive cardiovascular disease	Anxiety

were determined by a pilot study. The initial study was undertaken by enlisting the aid of three internists and a pediatrician. The design and scope of the study were discussed with each individual and all were given the special prescription forms. It soon became evident that it was almost impossible for a busy practitioner to write hospital drug orders in the order book as well as write out a prescription, and this aspect of the study was discontinued after six weeks. The prescriptions written in the physician's office or patient's home were readily obtained. The prescriptions for patients not seen by the physician were not as easily obtained, since the physician frequently did not have the special forms at his side or simply forgot to write out the prescription on the special form. It also became obvious that in the large study the participants would be requested to discard all of their own prescription forms.

The four physicians were unanimous in their appraisal that using the forms was not an undue burden on their time and stated they would be willing to continue indefinitely. After discontinuation of the request to complete forms for any hospital-ordered drugs, the physicians estimated the forms were used for 90-95 per cent of all drugs prescribed.

One physician who prior to the study felt that phoning orders to the pharmacist was time-saving, found that writing the prescription was actually quicker if two or less prescriptions were needed, but that more time was consumed if three or more were prepared. Two physicians who did not prepare copies of their prescriptions prior to this study were impressed with the usefulness of the copy and state they will continue to use them even after the study.

Outpatient drug utilization studies have been reported in which attempts were made to determine the class and quantity of drugs prescribed by general practitioners.<sup>1-4</sup> Although these types of data are useful, they cannot be used as effectively as data which include the indication for the use of each drug. A study of British general practitioners sought reasons for differences in their rates of prescribing.<sup>3</sup> This study suggested three factors of apparent significance. The factors were tentatively labeled as "quality of practice," "whole person orientation," and "education." In general, higher educational qualifications and an orientation toward the

TABLE 3  
PRESCRIPTION SURVEILLANCE STUDY  
DISEASE REPORT

<i>Disease</i>	<i>Drug Prescribed</i>
Hypertensive cardiovascular disease	Cardilate
	Darvon Comp
	Esidrix Tab
	(2) Esidrix Tab
	Hydrodiuril
	Ismelin
	(3) Ismelin
	Librium
	(4) Librium
	Nitroglycerin
Hypotension	Nitroglycerin
	Paveril
Hypothyroidism (myxedema)	(2) Paveril
	Ritalin
	Chloralhydrate
	Colace
	Cytomel
	Hydrodiuril
	Placidyl
	Synthroid

whole person are associated with lower prescribing of drugs of all kinds.

In 1967, Trounce<sup>5</sup> reported his findings of a short survey of prescribing in general practice in Great Britain. He found that when the disease being treated was a clear-cut entity with a clear-cut remedy, the practitioner and orthodoxy in the form of the National Formulary usually agreed as to the correct drug. In areas of less definitive diagnosis, considerable difference of opinion also existed as to the correct treatment. The other finding was that a large proportion of drugs was prescribed as proprietary preparations. The latter is not surprising and is corroborated by our preliminary data. A recent review of available information on prescribing habits of physicians was published by Stolley and Lasagna.<sup>6</sup>

The preliminary evaluation of our study indicates that it will be feasible to undertake a larger scale study of the prescribing behavior of practicing physicians. While a baseline is being obtained from the larger group, consideration will be given to evaluation of methods for disseminating drug information. We are presently considering the following possibilities:

1. Train selected medical students to visit physicians in Kansas as "detail men" during their elective time.
2. Set up a drug information center at each post-graduate program.
3. Prepare 8 millimeter movies for use in self-contained projectors such as Fairchild Mark IV.
4. Prepare audio tapes for use by physicians.
5. Arrange fellowship stipends so that practicing physicians can return to the Medical Center for one to two weeks of seminars and ward rounds relating to therapeutics.
6. Prepare a syllabus for a home study course in clinical pharmacology and toxicology.
7. Arrange circuit courses of county medical society meetings on drugs and drug therapy.
8. Prepare courses or material for distribution to registered pharmacists throughout the state for transmittal to the practicing physician.

In summary, our preliminary results indicate that it is feasible to use a special prescription form to accurately determine the drug utilization pattern of practicing physicians in an unobtrusive manner with a minimum of extra effort on the part of the physician. By participating in such a study, each physician can learn about his own drug utilization patterns and compare them with those of his colleagues. We are now considering methods of disseminating drug information and hope to have material ready in the near future. Finally, we also hope to obtain the consultation of individuals knowledgeable in be-

havioral research to help us with that aspect of the study.

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# 113th Annual Session Kansas Medical Society May 7-10, 1972 Hilton Inn, Salina

*Make Your Reservations  
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# Dupuytren's Contracture

## *When and What to Do about Dupuytren's Contracture*

LYNN D. KETCHUM, M.D., DAVID W. ROBINSON, M.D., and  
FRANK W. MASTERS, M.D.,\* *Kansas City, Kansas*

DUPUYTREN'S CONTRACTURE is one of the most enigmatic, paradoxical, and therefore most interesting diseases to affect the hand. Although the name of Baron Guillaume Dupuytren, a politically powerful French surgeon of the early 19th century, is associated with this disease process, he was neither the first to describe it, nor the first to clarify the pathogenesis. He was, however, the first surgeon to treat this disease effectively.

Although the etiology of Dupuytren's contracture remains obscure, much has been learned about the process. The monumental contributions of Skoog and Hueston have done much to delineate the clinical features of the disease and provide a rational approach to therapy.

It is our purpose to present the salient clinicopathological features of this broad and varied problem, as well as suggest guidelines for the timing and technique of surgical therapy.

As noted by Hueston, the disease process known as Dupuytren's contracture is, in reality, an alteration of fibroplasia associated with a wide variety of distinct and different clinical entities. In the early stages, the process is usually nothing more than a nuisance yet, as it progresses, it may become quite crippling.

Although no specific etiologic agent is known, there are certain predisposing factors so frequently associated with this disease process as to be considered integral parts of the Dupuytren's diathesis.

### **Dupuytren's Diathesis**

1. *Heredity*: The contracture may be transmitted as a simple autosomal dominant, and has been seen in as many as seven consecutive generations. It is confined to people of northern European descent.

2. *Age of Patient*: Dupuytren's contracture is intimately related to the aging process, specifically to fibrogenesis and collagen metabolism. This is evidenced by the fact that under the age of 40, the incidence is two to three per cent. This rises to 20 per cent at age 60, and 30 per cent at age 80.

Under 40, men are afflicted twice as frequently as women, but over 40 the incidence is the same, although men develop more flexion deformities than women. It appears bilaterally in 40 per cent of patients, and handedness is not a factor in its appearance (*Figure 1*).

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**A brief review of Dupuytren's contracture is given, including the natural history of the disease, its pathogenesis and the signs and symptoms. The management of the disease is discussed, stressing the importance of patient selection with particular regard to skin retraction, proximal interphalangeal joint contracture, and general diathesis. By doing this, a surgical procedure can be employed which minimizes the period of convalescence, yet reduces the possibility of recurrence.**

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3. *Rate of Progression*: Rate of progression is directly related to the age of the patient. That is, the contractures are more likely to progress in younger people, and if a young individual has a rapidly progressive process, this is considered part of a strong diathesis.

4. *Specific Intercurrent Disease*: Although the contracture is seen more frequently in people who do not use their hands for manual labor, the ratio being 55 per cent to 45 per cent, the incidence is tripled in chronic invalids, irrespective of the cause.<sup>4</sup>

Dupuytren's contracture also occurs with predictable frequency in patients with the following conditions: epilepsy—30 per cent; chronic alcoholism—40 per cent; tuberculosis—30 per cent.

5. *Knuckle Pads*: These are thickenings on the dorsum of the proximal interphalangeal joints which were first described in 1893 by Garrod, and consist of hyperplastic fibrous tissue similar to that seen in the palmar nodule. The etiology of knuckle pads is unknown, but they are found in over 75 per cent of patients with Dupuytren's contracture. In 1955, McIndoe

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Figure 1. Example of bilateral Dupuytren's Contracture.

stated that the clinician who observes a patient with knuckle pads may be quite sure that the patient either has a Dupuytren's contracture, or may very well develop one in the future.

6. **Plantar Nodules:** The importance of plantar lesions is that if they are seen in a patient with Dupuytren's contracture of the hand, the tendency of the patient to develop a recurrence of the Dupuytren's contracture in the hand is 75 per cent.

### Acute Recurring Palmar Fibromatosis

Dupuytren's contracture, per se, may occur in association with any or all of the aforementioned situations. If, however, a combination of these factors exist in a single individual, the overall process may become far more active. Rapidly recurring fibroplasia, although uncommon, carries a much poorer ultimate prognosis as far as therapeutic response is concerned. The cumulative effect of a combination of these predisposing clinical factors is revealed by rapid return of palmar nodules, extensive fibrosis, limitation of motion, and recurrence of contracture despite early and adequate surgical therapy.

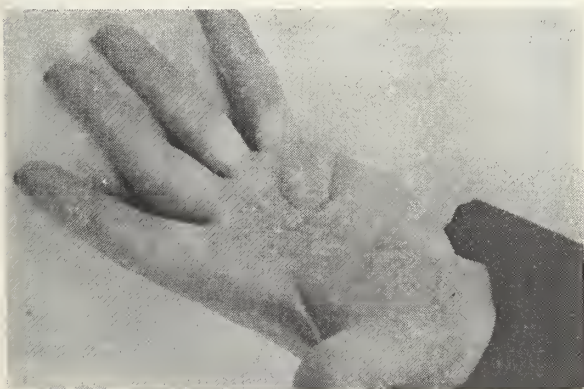


Figure 2. A typical nodule seen in Dupuytren's Contracture; this is usually the first manifestation of the disease.

### Pathology and Pathogenesis

The disease usually passes through two distinct phases; first, hyperplasia, and secondly, involution. In the hyperplastic phase there is an increase in the number of fibroblasts, collagen bundles, and capillaries, which form a nodule in the palm in the subcutaneous fibro-fatty layer, not in the palmar aponeurosis, which is the popular notion. This nodule is fused with the deep aponeurosis but never protrudes to the deep aspect of it (*Figure 2*).

The cellular aspect of this process is dominant initially, but later cellularity decreases markedly and is overshadowed by the accumulation of collagenous tissue. With time, vascularity also diminishes and as the collagen fibers mature and contract, the process is reduced to an involuted scar which retracts the overlying skin and contracts the involved fingers.

As early as 1834, Goyrand suggested that the pathodynamics of the disease occurred in the subcutaneous tissue between the palmar fascia and the skin. In 1887, Langhans first described the microscopic find-

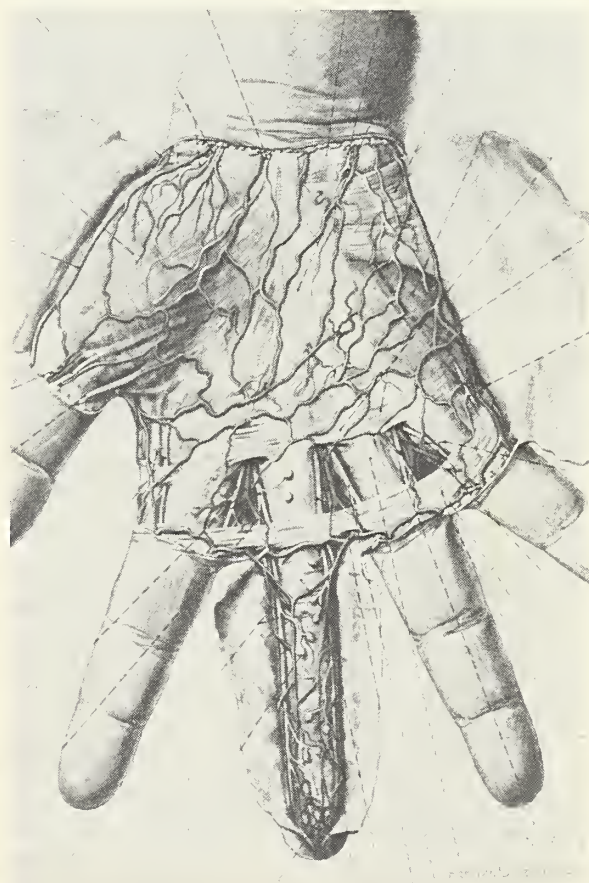


Figure 3. This dissection of the hand from Grant's Atlas of Human Anatomy shows the palmar fascia which is secondarily involved in Dupuytren's Contracture and contracts.





Figure 4. This shows the problems of skin retraction and proximal interphalangeal joint contracture in separate hands of the same patient.

ings in Dupuytren's contracture and stressed the progressive replacement of the surrounding palmar connective tissue anterior to the aponeurosis. In 1891, Anderson described the entity as a hyperplastic process consisting of fibrous replacement of the adipose tissue in the subcutaneous space primarily, and skin and aponeurosis secondarily (Figure 3). This has been restated and demonstrated recently by Hueston and MacCallum.<sup>1</sup>

### Symptoms

The symptoms from Dupuytren's contracture are usually not of pain, although the nodules which represent the phase of hyperplasia may be tender. The contracture representing the phase of involution is not painful. It can produce varying degrees of incapacity. Progression of contracture may be fast or slow, and is unpredictable. The ring finger is usually affected first and most frequently. The little finger is affected almost as frequently, but the middle finger is affected only one-third as frequently as the ring finger; the index finger and thumb only 10 per cent of the time.<sup>3</sup> As the contracture progresses, there is the danger that the patient will be unable to let go when he catches, hook-like, on some moving object. Many are unable to work because of the contracture, and a simple handshake may become impossible. When the fingers remain strongly flexed, the folds of the skin become macerated, and this may lead to infection.

### Plan of Management

The secret of the management of Dupuytren's contracture lies in timing and selection, that is, knowing when to intervene and what procedure is most appropriate for a given patient. Therapy should be based upon the following factors:

1. Present disability and future requirements of the patient. The patient's age, occupation, and responsibilities are taken into account. A 75-year-old man who

has retired and has a slowly progressing contracture will not need treatment, whereas a young architect with three children and a rapidly developing lesion can become crippled if the contracture is allowed to progress without intervention.

2. Degree of general diathesis. This is very important since the prognosis regarding recurrence is directly related to it. With a strong diathesis and rapid progression of disease, frequent observation, with anticipation of prompt and adequate surgical intervention at the point of significant joint contracture or skin retraction, is a most effective means of minimizing convalescence and morbidity.

3. Local factors, specifically skin retraction and proximal interphalangeal joint contracture (Figure 4). These considerations determine the necessity to operate and, if to operate, when. Contracture of the metacarpal phalangeal joint is usually not a problem and can almost always be brought out to full extension. Marked or prolonged contracture of the interphalangeal joint (approaching  $90^\circ$ ), however, is quite a different situation and secondary joint changes, such as



Figure 5. The curvilinear skin incision for a limited fasciectomy allows exposure for this limited area and prevents secondary contracture from a vertical scar.



narrowing of the joint space or shortening of the collateral ligaments, may preclude complete extension of that joint. Skin retraction and replacement of the subcutaneous fat by fibrous hyperplasia makes dissection tedious and compromises the vitality of skin flaps, predisposing to slough.

### Procedure

The only successful treatment of Dupuytren's contracture is surgical. Splints, injections, irradiation, and other approaches have been tried to no avail. The best procedure for any given patient combines the least surgical intervention capable of the most improvement in hand function, with a rapid convalescence and minimal chance of recurrence. Previous surgical experience has led to some definite conclusions. Although simple excision across the contracting bands produces immediate relief, as Baron Dupuytren found, recurrence is rapid.<sup>4</sup> Total or radical removal of the aponeurosis, however, is not the procedure of choice, because not only is the complication rate higher, but many of these patients develop a recurrence which bears a striking resemblance to the initial lesion. The radical procedure is fraught with serious complications, namely skin slough and hematoma, both of which may result in infection or a stiff hand. In most cases, a limited fasciectomy with excision of abnormal fibrous tissue when skin retraction or proximal interphalangeal joint contracture first begins to appear is the procedure of choice (*Figures 5 and 6*). Needless to say, meticulous hemostasis at the time of surgery is a cardinal rule and further fibrogenesis may be retarded by the injection of 80-100 milligrams of Triamcinolone diacetate into the soft tissue of the hand. If there is a significant contracture of the interphalangeal joint, a simple subcutaneous fasciotomy may be done initially through a small incision a short distance from the wound. A clock spring splint is then applied to the involved finger or fingers, and after maximum benefit is obtained in six to eight weeks, a limited fasciectomy is performed, or interruption of the contracture band at the proximal interphalangeal joint and at the metacarpal phalangeal joint, with insertion of full thickness grafts taken from the fleshy undersurface of the upper arm or lateral non-hair bearing aspect of the groin.<sup>5</sup>

### Prognosis

Prognosis depends upon two things, morbidity and recurrence. Morbidity is influenced by several variables: 1) Patient selection, *i.e.*, patients with marked skin retraction and proximal interphalangeal joint contracture will have a greater tendency for skin slough and a stiff hand. 2) Operative procedure. The radical fasciectomy in general carries a higher morbidity. 3) Surgical technique. The refined techniques of hand



*Figure 6.* The palmar fascia and abnormal fibrous tissue that replaces the subcutaneous fat is excised in the area of involvement only.

surgery have a special importance in the treatment of this problem. Gentle handling of tissue, meticulous hemostasis, elimination of dead spaces, and a firm compression dressing provide the basis for a rapid convalescence.

Recurrence in the past, in general, has been disturbingly high. In Hueston's series of 155 cases, there were 48 recurrences.<sup>1</sup> We have had a 25 per cent recurrence rate in 40 cases.

The high incidence of recurrence is almost directly related to the combination of predisposing factors comprising Dupuytren's diathesis. This profile can be an invaluable aid to the surgeon who is planning the management of a patient with a strong diathesis, *e.g.*, a young male epileptic with a strong family history of Dupuytren's contracture, with rapidly progressing contracture, and plantar nodules. In this instance, a limited fasciectomy will not be enough, as the odds would certainly favor a recurrence. Hueston has found in such situations that the only treatment that im-

*(Continued on page 130)*

# Choice of Weapons

## *Gestational Choriocarcinoma: Management and Therapeutic Alternatives*

RONALD L. STEPHENS, M.D.,\* *Kansas City, Kansas*

### Introduction

A LANDMARK in the chemotherapy of cancer occurred in 1956 when Li, Hertz, and Spencer<sup>1</sup> reported their observations on the effect of methotrexate on choriocarcinoma and chorioadenoma. Hertz and Tullner<sup>2</sup> developed the rationale for the use of antifolates in trophoblastic tumors when they demonstrated the high folate requirements of uteri from rats and monkeys. These investigators reported a widened experience in 1958,<sup>3</sup> and since these initial reports numerous studies have demonstrated impressive cure rates in trophoblastic choriocarcinoma.<sup>4, 5</sup> In the past, this excellent cure rate had in part been attributed to the chemotherapy, and in part to the fact that the malignant tissue had arisen in the immunologically distinct fetus with antigenic properties quite different from the patient or host tissue.<sup>6</sup> Unfortunately, the proven efficacy of methotrexate may be marred by development of resistance to this drug<sup>7</sup> and by toxicity to the accepted regimens of methotrexate which can be prohibitive. Initial and continued monitoring of renal function is imperative if fatal toxicity with methotrexate is to be avoided. Alternative drug programs have been advanced,<sup>8</sup> useful in instances where either renal function or inordinate toxicity preclude further use of methotrexate. It is the purpose of this paper to review the management of choriocarcinoma and to report a case where alternative therapy has been successful.

### Case Report

The patient (L.M.), aged 56, first presented to our hospital in January, 1970 with a two-week history of cough followed by hemoptysis, and a mass on chest x-ray. Significant in her past history was what initially was felt to represent a pregnancy at age 52. Five months after her last normal period she presented in July, 1965 with menometrorrhagia. D&C was performed and histological evaluation demonstrated a choriocarcinoma, without evidence of metastatic spread, but with invasion of the myo-

metrium. Subsequent follow-up over a two-year period showed consistently negative urinary chorionic gonadotrophin levels and negative chest x-rays. After two years, her follow-up was less intense, but she remained well until she developed cough and hemoptysis in January, 1970. Her first admission

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**Metastatic gestational choriocarcinoma can be successfully treated with chemotherapeutic agents other than methotrexate, and a case treated with Actinomycin-D and Vincristine is reported herein. The relatively advanced age at the time of disease onset, failure to treat an initial tissue diagnosis of choriocarcinoma, the long latent period before metastasis became clinically apparent, the need for gonadotrophin assays more accurate than pregnancy tests, and acceptable chemotherapeutic alternatives are illustrated by our case report. Methods of management and need for prolonged follow-up of gestational trophoblastic disease are emphasized.**

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to our hospital was on a surgical service where on January 21, 1970 a thoracotomy with lobectomy was performed. Tissue examination of the chest mass revealed metastatic choriocarcinoma. One day before the scheduled transfer to the medical service, she developed sudden weakness in both lower extremities, which within hours became localized to the left arm and leg. Physical examination revealed left-sided weakness and an equivocal left-sided Babinski. Brain scan and cerebral spinal fluid chemistries were normal. An EEG was abnormal with a right frontal and temporal slow wave focus. Initial plans for chemotherapy consisted of methotrexate 25 milligrams orally for five days, but only four days of treatment were given because of a fall in creatinine clearance and upper gastrointestinal hemorrhage (*Figure 1*). Steroids had been administered for possible

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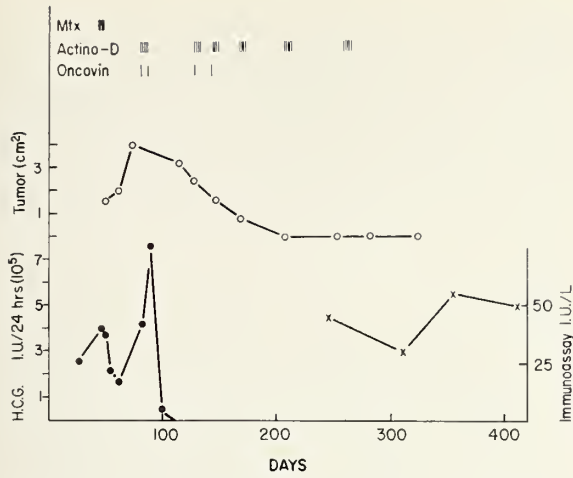


Figure 1. Effect of therapy on tumor and gonadotropin titer.

cerebral edema; and this, along with the methotrexate probably played a role in her gastrointestinal hemorrhage. Within five days of initiating methotrexate therapy, a new metastatic lesion appeared and the chorionic gonadotrophin levels increased to 96,000 international units per liter (I.U./L.). She developed a hypoplastic bone marrow, which together with the fall in creatinine clearance prompted cessation of treatment and a re-evaluation of chemotherapy agents. The bone marrow continued to be hypoplastic until March 23, 1970, when she could be given a course of Actinomycin-D 0.5 milligram intravenously for five consecutive days, and 2.5 milligrams of Vincristine on the first day. The urinary gonadotrophin titer became negative on April 27, 1970. In the next six months, she received five more courses of Actinomycin-D, and Vincristine during the first two courses. In July, the right lower lobe metastasis had disappeared. Urinary gonadotrophin titers remained negative, and after appropriate pituitary suppression, a serum radioimmunoassay, performed by the M. D. Anderson Trophoblastic Disease Center on August 31, 1970, showed 45 I.U./L. (normal range for women with nonfunctional ovaries 30-100 I.U./L.). Three subsequent immunoassays for human chorionic gonadotrophin were normal (30 I.U./L. in November, 55 I.U./L. in December, and 35 I.U./L. in May, 1971). The complete remission is continuing.

## Discussion

This case is of interest because of the patient's relatively advanced age at the time of initial diagnosis, the four-year latent period before clinical evidence of metastases, the manner in which titers of human chorionic gonadotrophin were followed, and the alternate therapeutic regimen employed.

For the non-pathologist, the histological classification of trophoblastic disease can be confusing. Hydatidiform mole is the term applied when molar villi are confined to the endometrium, whereas chorioadenoma destruens is used when the molar villi and associated trophoblast are found within the myometrium or parametrium. The difference between chorioadenoma destruens and choriocarcinoma is largely quantitative with the latter histological designation applied to a more extensive trophoblastic overgrowth and direct invasion of myometrium, parametrium, or extragenital metastases.<sup>3</sup> The management of hydatidiform mole is different, despite the impression by some that pathogenetically this entity progresses to chorioadenoma destruens in 20 per cent of the cases.<sup>7</sup> The incidence of hydatidiform mole converting to choriocarcinoma has been lower in other series, ranging from 2.5 per cent to 7.6 per cent,<sup>9</sup> and appears to vary in different parts of the world.

Because of this geographic variation, prophylactic chemotherapy for the relatively more benign classification of hydatidiform mole is unsettled. In Japan, the high incidence of conversion to choriocarcinoma in a controlled series would tend to justify early prophylactic chemotherapy even in hydatidiform mole.<sup>9</sup> However, the British have felt that with the current number of cases studied, the risk of chemotherapy was not justified in view of the low conversion rate to choriocarcinoma, and that even the efficacy of such prophylaxis was doubtful.<sup>10</sup> However, in the case reported here, hydatidiform mole was only the initial gross impression but histologically our patient already had choriocarcinoma, and chemotherapy should have been given.

The latency with which distal metastasis appeared in our patient emphasized the need for vigilant long-term follow-up in patients with malignant trophoblastic disease. It has been well established that a patient's likelihood of complete response to chemotherapy is dependent on duration of symptoms prior to treatment, and on the initial level of urinary chorionic gonadotrophin titers.<sup>4, 11</sup> An expected 95 per cent cure rate is realistic when symptoms have been present for less than four months, and initial urinary gonadotrophin titers are less than 100,000 I.U. per 24 hours.<sup>11</sup> Evacuation of a hydatidiform mole, chorioadenoma destruens, or choriocarcinoma should be followed by frequent physical examination, chest x-ray, and gonadotrophin titers. For hydatidiform mole, Hammond *et al.*, have recommended that if weekly gonadotrophin titers rise significantly or remain elevated six to eight weeks postevacuation, chemotherapy should be initiated.<sup>12</sup> Even in the absence of metastases, these authors point out the need for immediate chemotherapy if the initial tissue di-



agnosis is chorioadenoma destruens or choriocarcinoma, and if this policy had been followed in our patient's initial care, she quite probably would not have needed a thoracotomy four years later.

If the tissue diagnosis is limited to hydatidiform mole, and the immediate post-evacuation period is followed by three consecutive negative gonadotrophin titers, the frequency of follow-up can be reduced to monthly intervals for the next six months. In face of continued negative gonadotrophin titers after six months, additional follow-up can be safely changed to every two months for an additional year.<sup>12</sup>

The next problem of following patients with trophoblastic malignancy involved the method for gonadotrophin determination. Most hospitals report gonadotrophin titers by utilizing dilutional techniques from a standard pregnancy test. These pregnancy test titers are useful in the follow-up of trophoblastic malignancy only when positive. Purposely, the pregnancy tests are sensitive only in the range of 500-1,000 I.U./L., minimizing the incidence of false positive tests for detecting the state they were designed to disclose, namely pregnancy. It is well established that as many as 30 per cent of the patients with either chorioadenoma or choriocarcinoma will have titers below the borderline range of 200-500 I.U./L.<sup>12</sup> Therefore, the quantitation of titers by the usual pregnancy tests is helpful only when positive. Our patient serves to emphasize this point, in that even after chemotherapy there was continued x-ray presence of a metastasis for several weeks after the pregnancy test titers had become negative. Once a negative assay is reported, a more sensitive determination of serum or urine gonadotrophin level must be performed.<sup>12, 13</sup> Currently, radioimmunoassays for gonadotrophin on serum are being done at a few trophoblastic centers, such as the M. D. Anderson Trophoblastic Center in Houston. It must be remembered that the pituitary is normally a source of gonadotrophin, and in women with functioning ovaries the normal gonadotrophin excretion is around 20 I.U./L. of urine (5-30 I.U./L. of serum by the radioimmunoassay method); but in the absence of negative feedback in the postmenopausal female, the normal excretion may be as much as 200 I.U./L. of urine (30-100 I.U./L. of serum by radioimmunoassay method), entirely from pituitary origin. In our patient, the pituitary source of gonadotrophin was inhibited by the administration of a depo suspension of 200 milligrams medroxyprogesterone acetate approximately ten days before a serum specimen was obtained for radioimmunoassay of gonadotrophin. Once physical examination or x-ray evidence of metastases has

ceased to exist, continued chemotherapy is dependent on the radioimmunoassay results.

Therapy of gestational trophoblastic malignancy has provided medicine with its first chemotherapeutic cure of cancer. A hormone secreting tumor with readily available accurate assay methods has provided an excellent opportunity to maximize tumor cell kill, without destroying the host patient. The development of the experimental rationale for use of antifolates in tissues requiring high folate levels is described above.<sup>2</sup> At least a portion of the original chemotherapeutic regimen of Li *et al.*,<sup>1</sup> has found its way into a gynecologic textbook.<sup>14</sup> This now almost standardized program consists of methotrexate 2.5 milligrams per kilogram per day over a five-day course. This program is administered to tolerance at two to three week intervals, usually for three to five courses. It is the author's impression, however, that rigid adherence to this dosage is unwise and that the dosage must be based on total body weight or body surface area. In our patient, only four days of a planned five-day course resulted in a severe and prolonged bone marrow hypoplasia. This occurred in face of normal renal function as measured by a creatinine clearance of 93 milliliters per minute. It was this severe hematologic toxicity, gastrointestinal hemorrhage, and rapid fall in creatinine clearance to 66 milliliters per minute that prompted the alternate drug regimen used in our patient. Modestly reduced total doses of methotrexate, in the range of 75-100 milligrams over five days, have been used with acceptable success rates.<sup>4, 13</sup> In a recent review, Li has emphasized the need for individualization of methotrexate dosage.<sup>15</sup>

The question of how long to continue therapy in a tumor responsive to methotrexate varies from author to author. Li feels that after the gonadotrophin titer returns to normal, only one additional course of therapy is necessary.<sup>15</sup> Ross *et al.*, would continue treatment only until gonadotrophin levels become normal.<sup>4</sup> Johnson *et al.*, postulate that continuing chemotherapy for four to six months beyond the first negative gonadotrophin titer may decrease recurrent disease.<sup>16</sup> Over a period of five months, our patient received five additional courses of Actinomycin-D after her first negative urinary gonadotrophin titer. Whichever treatment philosophy prevails, it should be re-emphasized that cessation of therapy must necessarily depend on some quantitative assay more accurate than the usual pregnancy tests.

We do not consider our patient a methotrexate failure, but changed to the above described alternate regimen because of marked bone marrow toxicity, gastrointestinal hemorrhage, and decreasing renal function. The sequential use of methotrexate and Actinomycin-D has found some favor, but at least

one group of investigators would consider either of these drugs, or both in combination, as acceptable primary therapy for gestational trophoblastic disease.<sup>17</sup> In general, the indications for changing drug therapy are threefold: failure to respond after two courses with one drug, gonadotrophin titers which are rising or leveling off; and, as in our case, excessive toxicity to the primary drug used.

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There is no registration or enrollment fee.

# Metastatic Cancer

## *Diagnosis Head and Neck Cancer*

C. W. NORRIS, M.D.,\* *Kansas City, Kansas*

A GREATER number of patients with malignancies of head and neck mucous membrane origin are curable if discovery of the lesion is accomplished early and proper scientific therapy delivered. According to statistics published by the Epidemiology and Statistics Department of the American Cancer Society, approximately three new cases of cancer occur for 1000 persons in a community; and two-thirds of these will die of the disease. Strikingly significant, however, is that 250 of each 1000 population will eventually develop cancer, and 150 (60 per cent) of these will die of cancer if the present survival rate continues. The estimated yearly incidence for 1971 is illustrated in *Table I* for upper airway and upper alimentary tract regions. In Kansas, the statistics are almost comparable, as indicated in *Table II*.

Survival is significantly influenced by the stage of the disease when therapy is instituted. *Table III* demonstrates five-year survival for head and neck primaries, based upon the stage of the disease at the time of diagnosis. *Table IV* tabulates percentages of patients in each stage at the time of diagnosis. The trend shows that if the disease is localized at the time of diagnosis, the five-year survival is improved. *Table V* presents five-year survival for all stages.

Early diagnosis, as related to survival, is readily exemplified by the program of early detection and diagnosis of cancer of the cervix. *Table VI* presents statistics on cervical carcinoma for comparison to those of head and neck tumors.

When the detection of head and neck malignancies is approached with early diagnosis and proper therapy, a significant increase in five-year survival is realized. Unfortunately for the patient with carcinoma of the head and neck region, carcinoma is often not thought of until many months after the onset of symptoms. The following cases are typical of this problem.

*Case 1.* A 65-year-old female was referred because of persistence of pain in her throat and difficulty in talking and eating of five months duration. The patient had been treated with cultures, antibiotics, and gargles without relief of symptoms. Initial examination by mirror revealed a large fungating lesion of the base

of the tongue and fixed metastatic nodes in the right side of the neck. Biopsy of the primary lesion confirmed the diagnosis of squamous cell carcinoma.

*Case 2.* A 75-year-old male was referred because of persistent hoarseness of three months duration. Voice rest and antibiotics failed to relieve the dys-

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**The incidence of cancer is increasing and many patients are salvable if diagnosis is established early and the proper therapy instituted. A high degree of suspicion is necessary to facilitate early diagnosis. An approach similar to the widely practiced "cancer detection" for cervical lesions is urged. No special equipment is needed except for a head mirror and laryngeal mirrors. Early referral for diagnostic problems is urged. Complacency, along with observation of neck masses, will not improve the five-year survival.**

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phonia. Mirror examination readily revealed a lesion of the vocal cords, which was confirmed as squamous cell carcinoma by direct biopsy.

*Case 3.* A 21-year-old female was referred because of a diagnosis of adenocarcinoma in a neck node. Examination revealed a mass in the thyroid gland on the side of the metastatic follicular adenocarcinoma of the thyroid gland.

*Case 4.* A 60-year-old male with an eight-months history of sore throat was treated with antibiotics. The quality of his voice had changed but no hoarseness was present. Examination by mirror demonstrated an ulcerated lesion of the epiglottis. Fixed nodes were palpable in the left side of the neck. Biopsy of the primary at the time of direct laryngoscopy confirmed the diagnosis of squamous cell carcinoma.

*Case 5.* A 51-year-old male with a three-months history of hoarseness was treated with antibiotics. Mirror examination revealed a large fungating lesion of the aryepiglottic fold, false cord, and pyriform sinus. Biopsy confirmed the diagnosis of squamous cell carcinoma.

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\* From the Department of Otorhinolaryngology, University of Kansas Medical Center, Kansas City, Kansas 66103.



TABLE I  
ESTIMATED CANCER IN U. S., 1971

Site	Incidence	Deaths	Survival %
Buccal cavity & oropharynx . . . . .	14,200	7,000	51
Respiratory tract other than lung . .	9,100	3,900	58
Cervix & uterus . . .	42,000	12,700	70

TABLE II  
ESTIMATED CANCER IN KANSAS, 1971

Site	Incidence	Deaths	Survival %
Buccal . . . . .	150	75	50
Uterus & cervix . . . .	600	150	75

Case 6. A 56-year-old female was admitted with a one-year history of a sore tongue, mass in the neck, and weight loss. Antibiotics had failed to relieve the symptoms. Examination revealed an ulcerated mass at the base of the tongue involving the anterior tonsillar pillar. Palpation of the neck revealed a 4 x 6 centimeter tender mass at the level of the carotid bifurcation. Biopsy of the primary lesion confirmed the diagnosis of carcinoma.

TABLE III  
SURVIVAL, 5-YEAR, ACCORDING TO EXTENT

Site	Local %	Regional %
Lip . . . . .	91	49
Mouth . . . . .	83	33
Tongue . . . . .	54	21
Pharynx . . . . .	41	25

TABLE IV  
STAGE, TIME OF DIAGNOSIS

Site	Local %	Regional %	Other %
Lip . . . . .	89	7	4
Tongue . . . . .	40	49	11
Mouth . . . . .	62	30	8
Pharynx . . . . .	25	58	17
Larynx . . . . .	58	33	9

The above cases exemplify the lack of suspicion that malignancy is the etiology of symptoms or masses in the head and neck region. Infection is usually the major etiological agent considered with secondary lymphadenopathy. This is usually true in the child, but rarely in the elderly patient. Skolnik in 1965, surveyed 2,348 neck masses admitted to the hospital. Of these, 789 represented metastatic disease in the neck; and he concluded that if congenital cysts and thyroid disease are eliminated, 80 per cent of all neck masses represent neoplastic disease. He concluded that all painless swellings in the neck are malignant until proven otherwise. Larson<sup>2</sup> *et al.*, in 1968, stated that many physicians are not as well informed or suspicious of carcinomas of the head and neck region as elsewhere. It is the purpose of this paper to review the anatomy, physical examination, workup, and pathology in relation to head and neck tumors.

TABLE V  
SURVIVAL, 5-YEAR, ALL CASES

Site	Survival %
Lip . . . . .	88
Tongue . . . . .	36
Mouth . . . . .	65
Pharynx . . . . .	27
Larynx . . . . .	52

TABLE VI  
SURVIVAL & STAGE, CANCER, CERVIX

Survival % 5-year	Stage, Time of Diagnosis
65 all stages . . . . .	63% local
81 local . . . . .	25% regional
45 regional . . . . .	12% other

## Anatomy

The neck is divided into two unequal triangles by the sternomastoid muscle. The posterior triangle is formed by the clavicle, anterior border of the trapezius, and the posterior border of the sternomastoid muscle. The anterior triangle is formed by the anterior border of the sternomastoid muscle laterally, midline medially, and the mandible superiorly. The majority of metastatic disease encountered will occur in this triangle. Of the ten groups (Table VII) of lymph nodes in the neck, one-half are

TABLE VII  
LYMPH NODE GROUPS

Occipital	Facial
Mastoid	Sublingual
Parotid	Retropharyngeal
Submaxillary	Lateral cervical
Submental	Anterior cervical

located in this area. All groups can be palpated on routine neck examination except for the sublingual and retropharyngeal nodes. The lymphatic drainage pattern in the neck, when understood, generally directs suspicion to certain primary sites when metastatic disease is present. Kinsey<sup>3</sup> *et al.*, in 1958, studied 150 patients with neck masses and graphically depicted this pattern. The reader is referred to a good anatomy text such as Hollinshead and numerous published articles.

Palpation of the neck should start with known landmarks and proceed in a systematic search throughout the neck for abnormalities. *Table VIII* lists all major structures identifiable. Occasionally, the carotid bifurcation, greater cornue of the hyoid bone, or the transverse process of the sixth cervical vertebrae (Chassaignac's tubercle) are mistaken as neck masses. Also, masses can be mistaken for normal structures to the examiner unfamiliar to palpating the neck.

TABLE VIII  
NORMAL LANDMARKS OF THE NECK

1. Midline
  - a. Mandible, symphysis
  - b. Hyoid, body
  - c. Thyroid prominence
  - d. Cricoid cartilage
  - e. Tracheal rings
  - f. Thyroid isthmus
2. Lateral
  - A. Bony structures
    - a. Hyoid bone, greater cornu
    - b. Cervical vertebrae, Transverse process
  - B. Cartilagenous structures
    - a. Thyroid cartilage superior horn
    - b. Thyroid cartilage inferior horn
  - C. Soft tissue
    - a. Sternocleidomastoid muscle
    - b. Submaxillary gland
    - c. Thyroid lobe
    - d. Carotid bulb and bifurcation

### Differential Diagnosis

Numerous classifications of neck masses have been prepared. These are subdivided either as midline and

lateral masses, or primary and secondary masses. *Table IX* presents one such classification as prepared by R. Farrior. Further discussion of the masses encountered in the neck will not be presented here since numerous articles are available covering the subject more than adequately. Stress, however, will be

TABLE IX  
DIFFERENTIAL DIAGNOSIS OF  
NECK MASSES

- I. Primary swellings
  - A. Developmental
    1. Thyroglossal duct cyst
    2. Branchial cleft cyst
    3. Dermoid cyst
  - B. Inflammatory
    1. Lymphadenitis
    2. Primary abscess
  - C. Neoplastic
    1. Lymphatic
      - a. cystic hygroma
      - b. lymphangioma
    2. Glandular
      - a. thyroid
      - b. salivary
      - c. parathyroid
    3. Vascular
      - a. carotid body tumor
      - b. hemangioma
    4. Connective tissue
      - a. lipoma
      - b. fibroma
      - c. neurofibroma
  - D. Dilatations
    1. Aneurysm
    2. Hypopharyngeal diverticulum
    3. Laryngocele
- II. Secondary swellings
  - A. Regional
    1. Inflammatory
      - a. ENT infection
      - b. dental
      - c. dermatitis
      - d. granulomatous
        1. cat scratch
      2. oculo-glandular syndrome
    2. Neoplastic
      - a. metastatic above clavicle
      - b. metastatic below clavicle
  - B. Non-regional
    1. Inflammatory
      - a. tuberculosis
      - b. syphilis
      - c. infectious mononucleosis
    2. Neoplastic
      - a. leukemia
      - b. Hodgkins disease
      - c. lymphosarcoma

placed on the regional secondary masses in the neck since these represent metastatic cancer. Eighty per cent of painless neck masses represent metastatic carcinoma, if inflammatory, congenital, and thyroid masses are eliminated. After the fifth decade, 90 per cent of all cervical masses represent metastatic disease, and squamous cell carcinoma of mucosal origin comprises 79.4 per cent of these. Thus, a large percentage of these patients have detectable primary lesions if a systematic search is conducted.

### Diagnosis

Workup of a patient with a neck mass starts with a complete history and general physical examination. However, physical examination of the mucosal areas must be done with a systematic diligent approach. If, for any reason, areas cannot be inspected due to exudate or poor exposure, appropriate measures should be instituted. This would involve removal of all exudate from the nose, cerumen or pus from the ear canal, and dentures from the mouth. Tongue depressors should not be used to hide lesions in the floor of the mouth but instead to expose all mucosal folds in the oral cavity. Paramount to this examination is the use of a head mirror for a light source, and the laryngeal mirror for indirect laryngoscopy. Also, all patients with hoarseness as the only symptom should have a careful examination of the vocal cords if the dysphonia persists over two weeks. If this examination cannot be accomplished, then referral should be carried out. Bimanual palpation of the tongue, floor of mouth, and base of the tongue should be done. Cup biting biopsy specimens should be obtained from all suspicious lesions. A negative report for cancer only indicates the need for further biopsies of any lesion thought clinically to be cancer. The following patient's history exemplifies this principle.

This 75-year-old female noted one month prior to examination a scratchy feeling in her throat. Examination revealed an infiltrative lesion in the upper pole of the right tonsil. Tissue biopsy from this lesion was reported as chronic inflammation. Since the clinical diagnosis was carcinoma, a rebiopsy was done; again, chronic inflammation. Finally, after the third biopsy in one week's time, a diagnosis of squamous cell carcinoma was confirmed. Suspicion, along with persistence, established an early diagnosis and a more favorable prognosis. If, after careful inspection, a primary lesion cannot be found, a thorough systematic study must be conducted as indicated in *Table X*.

Surgical attack to metastatic mass in the neck is done as the final diagnostic maneuver. Skolnik stated that "the surgeon who biopsies a mass must assume the definitive care of the neck mass and its primary." It is generally accepted that irreparable harm has been done by excisional biopsy to establish a diagnosis that

TABLE X  
FLOW SHEET, DIAGNOSIS OF NECK MASS

- I. History
- II. Physical examination
  - A. Mucosal surface exam
    1. oral cavity—inspection & palpation
    2. anterior rhinoscopy
    3. posterior rhinoscopy & nasopharyngoscopy
    4. indirect laryngoscopy
    5. salivary glands—inspection & palpation
  - B. Neck—inspection & palpation
- III. Laboratory studies
  - A. Liver function
  - B. Hematological
  - C. Urine
- IV. Radiological
  - A. Chest
  - B. Lateral neck
  - C. Barium swallow
  - D. Laryngogram if lesion of larynx
- V. Endoscopy and biopsy of lesion if found, otherwise Panendoscopy
  1. bronchoscopy
  2. esophagoscopy
  3. nasopharyngoscopy
  4. laryngoscopy
- VI. If no lesion found
  - A. Sinus X-rays
  - B. Sialogram
  - C. Carotid arteriogram if indicated
- VII. No lesion found above clavicle
  - A. GI series
  - B. Barium enema
  - C. IVP
  - D. Tomograms of suspicious lesion in chest
- VIII. If no primary lesion found, biopsy of neck mass
  - A. excisional
  - B. needle

by history and examination is malignant. Adequate and intensive search for a primary is usually conclusive. At the present time, a retrospective study is being conducted to determine how survival is affected by excisional biopsy. Occult primary tumors have an incidence from two to ten per cent. The greater and more intense the search, the lower the percentage of occult primaries.

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# Kansas Breast Study

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J. C. MAHONEY, M.D. and O. R. BOEHM, Ph.D.,\* *Kansas City, Kansas*

FOR FIFTY YEARS, the uncontested treatment for carcinoma of the breast was radical mastectomy. In the 1950's, McWhirter<sup>1</sup> began treating carcinoma of the breast by mastectomy and radiation therapy. This opened the door and let in a host of innovative procedures as well as modifications of radical mastectomy for treating carcinoma of the breast. Two claims used to justify these innovations were: 1) a decrease in the magnitude of the surgical procedure, and 2) less "mutilation of the female." Both of these points are very excellent, but must be considered in proper perspective with the basic consideration for operating on the female with carcinoma of the breast; *i.e.*, to use the procedure which has the best possibility of effecting a five-year survival. Having expressed the above two points, the innovator of a new method for treating carcinoma of the breast frequently departs from logic and apologizes that the operation does not give a better survival rate, and then hastily adds that it achieves almost the same survival rate with less physical and psychological trauma to the female. In all cases, there is lack of a scientific basis upon which the procedure is based. For years, Crile<sup>2</sup> has raised one "scientific" point which is completely sound but is without scientific support (*i.e.*, if the axillary nodes are not clinically involved, they should be preserved, since "memory" for the tumor resides in the regional nodes).

In a preliminary study,<sup>3</sup> we attempted to collect scientific data for determining the proper treatment of the regional lymph node in carcinoma of the breast. In the preliminary study all patients seen in the Breast Clinic with any type of breast mass were entered in the program. A blood sample was obtained and they were given an injection of tetanus toxoid. In one to ten days, these patients were taken to the operating room and a breast biopsy was performed. After frozen section, the appropriate therapy was instituted, which included no further treatment for benign lesions or radical mastectomy for those with carcinoma of the breast. Another blood sample was drawn from these patients at six and twelve weeks. The data can be seen in a reproduction of the original tables (Table I).

From this table, it can be seen that of the patients with benign disease treated by biopsy, ten or eleven made adequate serum antibody titer to tetanus toxoid. In the next group, those having radical mastectomy for carcinoma of the breast, one of nine made an

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**The study represents "a first" in which a research program is conducted by the joint efforts of a state university medical center and physicians throughout the state. This joint effort reflects the posture of the Department of Surgery at K.U.M.C. in joining with physicians throughout the state in medical education and research.**

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adequate serum antibody titer to the injection of tetanus toxoid. In the third group, patients were treated by simple mastectomy with preservation of the axillary lymph nodes for carcinoma due to circumstances such as uncontrolled second primary carcinoma, distant metastases from their breast carcinoma at the time of surgery, or because of massive axillary lymph node involvement. None of these seven patients made any detectable serum antibody following the injection of tetanus toxoid. The results from the patients in this third group prompted the speculation that this inadequate primary immune response is not due merely to removal of the lymph nodes draining the site of antigen injection, but may very likely represent a systemic immunologic unresponsiveness.

While these data are interesting and help to define the immunologic responsiveness of the patient with carcinoma of the breast, unfortunately they do not give information directly regarding the patient's tumor immunity. In an attempt to determine immunity to breast cancer, immunodiffusion tests were employed testing the above sera against breast cancer tissue. The preparation used as antigen was prepared as described previously.<sup>3</sup> Three sera from patients gave a line of precipitation in immunodiffusion against breast cancer tissue. The appearance of antibody was noted in two of the patients after removal of the cancer, and the disappearance of the antibody

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TABLE I  
RELATIONSHIP OF ANTITOXOID ANTIBODY TITER TO STATUS OF REGIONAL LYMPH  
NODES IN PATIENTS WITH BREAST DISEASE

<i>Group</i>	<i>Response to Tetanus Toxoid Immunization</i>			
	PRIMARY No.	Normal	SECONDARY No.	Normal
Biopsy only—30 yrs. ....	11	10	8	8
Radical Mastectomy—60 yrs. ....	9	1	3	2
Carcinoma—axillary nodes left intact*—59 yrs. ....	7	0	0	0

\* Includes one patient with severe fibrocystic disease.—Number in years in each group represents average age for that entire group.

in their serum at 12 weeks. We would assume that in two of the patients the antibody was absent at the time the breast tissue was still present, because the cancer antigen was acting as a sponge absorbing the antibody out of the circulation. After removal of the malignant breast tissue, the antibody appeared in the serum in sufficient titer to be measured in immunodiffusion tests. Tests are now under way in the laboratory to define the specificity of this antibody with respect to its activity for breast cancer antigen vs. normal breast tissue antigens.

### Chart Review

Recently, a chart review of 12 patients included in the preliminary study was conducted. Eleven of these patients had radical mastectomy for carcinoma of the breast. The twelfth patient had simple mastectomy for severe fibrocystic disease. The follow-up of the nine patients who had radical mastectomy for carcinoma of the breast, and whose sera did not form a line of precipitation against breast cancer antigen in immunodiffusion tests, revealed the following:

1. Of the four patients with histologically positive axillary lymph nodes all have either proven recurrence of their cancer, or were dead from cancer one to two years after their primary operation.

2. Five patients' operative specimen were proven histologically to have axillary nodes free of breast cancer. Only one patient has proven recurrence of breast cancer within one year after primary operation.

The two patients who had radical mastectomy for carcinoma of the breast with histologically positive lymph nodes, and whose serum had antibody against breast cancer tissue, had no recurrent disease one to two years after primary operation. The third patient with serum antibody against breast cancer tissue had an interesting history in that two and one-half years previously she had a right radical mastectomy for

proven carcinoma of the breast. At the time she entered this study, the patient had severe fibrocystic disease in her remaining breast for which a simple mastectomy was carried out.

The number of cases in this study is small but the data obtained are extremely interesting. The significance and proper interpretation of these data can only be made with a much larger series. However, one might speculate, with the data obtained from the patient having simple mastectomy for severe benign disease and demonstrating serum antibody after removal of this disease, that the patient with premalignant breast changes may be detected very early by testing her serum. Of the 15 patients with carcinoma of the breast treated by radical mastectomy, 13 demonstrated no antibody and two demonstrated antibody in their serum to breast cancer tissue. Because of the small number in these two groups, one can only speculate that the presence of antibody renders a favorable prognosis and may indicate the removal of all tumor at surgery. In contrast, the group that did not have serum antibody after radical mastectomy and who had histologically positive axillary nodes represents a prognostically poor group. Further, the test may indicate that a significant amount of the breast cancer antigen remained in these patients. The eventual recurrence of cancer in those patients with no serum antibody and histologically negative axillary nodes must be suspected.

### Kansas Breast Study

The extremely interesting and positive data obtained in a preliminary breast study must be supported by a more extensive series, so that the true significance and proper interpretation of these data can be ascertained. Hence, the Department of Surgery at the University of Kansas Medical Center is creating a statewide breast study. The study requires the voluntary consent of the patient and the participating physician. It can be regarded as an experimental pro-

gram, but in effect it offers no experimentation or risk to the patient. It entails one extra trip to the physician's office to obtain the necessary blood samples. Testing of the sera will be carried out in the immunology laboratory of the Department of Surgery at the University of Kansas Medical Center and, therefore, testing the sera is of no expense to the patient. In addition, the laboratory to which the patient is referred for drawing and harvesting the blood samples will be reimbursed for each blood sample, thereby saving this expense for the patient as well. From the following brief outline, the protocol is kept as simple as possible to make it as convenient as possible for the practicing physician.

Every breast patient when seen is told briefly that there is a Kansas Breast Study to study methods of serum diagnosis of cancer. They are told that there is not any real experimentation and that the following will be done:

1. At the time when the patient is scheduled for breast biopsy, she will be given 0.5 milliliter of tetanus toxoid (if there is no allergic history to tetanus toxoid).

2. The patient is scheduled for surgery and is then sent to the laboratory with a note requesting that 10 milliliters of venous blood be drawn. The serum is harvested from the blood and this is sent immediately in a mailer to Loren J. Humphrey, M.D., Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas 66103.

3. The second blood sample is obtained from the inpatient, or outpatient, at the time of suture removal in the same manner by having the laboratory withdraw 10 milliliters of blood. The serum is harvested and sent immediately to the University of Kansas Medical Center. Thus, the second blood sample will be obtained five to ten days post-operatively.

4. The patient should be instructed to return to the doctor's office approximately four weeks post-operatively for a checkup. At this time, the patient is sent for the third sample, which is obtained as described above. If this is an extra trip for the patient, hopefully the patient would not be charged for an extra visit just for the study.

In over 90 per cent of the patients no further studies will be necessary. Data as to operative procedure, tissue diagnosis, etc., should be sent with this sample on a form supplied by K.U.M.C. The procedure for this study is made as easy as possible for the physician to carry out in order to encourage as much participation as possible. Proper feedback to the physician who sends sera, results of the study and data from individual patients are stored in a computer which automatically sends results as well as a reminder for subsequent samples. The first sample

from the laboratory will have the patient's name and the referring doctor's name. These will be entered in the computer which will automatically send out a card as a reminder for obtaining subsequent blood serum samples, and a data card to be filled in on the last visit. The desired data will be kept brief to facilitate participation by the busy practitioner. The serum will be tested in large lots once each month. Within three months, the results on each patient will be sent to the referring physician. It is likely that the patients having antibody to breast cancer tissue represent a group that would benefit from additional serum samples every six months, to determine the reappearance of antibody with the recurrence of breast cancer.

### Conclusions

Data from a preliminary study of patients with breast disease suggested that the breast cancer patient is immunologically unresponsive compared to the patient with benign breast disease. Patients with breast cancer who develop antibody to cancer tissue may represent a favorable group compared to those who do not develop antibody after their operation. These data prompted the formulation of a larger study—The Kansas Breast Study. This study is described in an effort to enlist the participation of all the physicians in the state of Kansas doing breast surgery. The entire expense of this study is supported by the Department of Surgery at the University of Kansas Medical Center with the aid of a grant from the federal government. Forms are brief and results will be reported regularly to the participating physician.

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# Avoiding Infections

## *Clean Air Operating Rooms*

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IN THE FIFTIES, airborne dust was recognized as the villain in decreasing reliability of complex, high-tolerance equipment in industry. Because of this, clean-room technology began with the use of laminar flow principles at Sandia Laboratories in 1960, and grew with the first application in a laminar flow bench at the Bulova Watch Company in April, 1962. The National Aeronautics and Space Administration mission requirements led to sophisticated application of the principle, and in 1964, the first hospital room tests were performed by the U. S. Public Health Service. The first operating room clean-air unit was in Bataan Memorial Hospital, Albuquerque, New Mexico, in 1962. In the American tradition, many systems have developed resulting in divergent problems and successes. It is at this point that the relative merits of different systems must now be subjected to scientific criticism.

The "clean air principle" of laminar flow depends on a confined body of air moving with uniform velocity and direction in parallel flow lines. The air is filtered through dry High Efficiency Particulate Air (HEPA) filters, constructed of a pleated medium of non-woven fiberglass fibers the consistency of blotting paper, secured to a wooden frame by adhesive. Air is drawn through dry throw-away-type pre-filters and driven through the HEPA filter by "squirrel-cage" fans. The resultant efficiency is 99.97-99.99 per cent for removing particles 0.3 microns in size or larger (staphylococcus aureus is 0.7 microns).

In operating rooms of ordinary size the best conventional ventilation systems change air 10 to 20 times per hour. In laminar flow units a velocity of 100 feet per minute (about one mile per hour)—which is well below the personnel discomfort range—obtains a complete change of room air at the rate of 200 times per hour.

In reality, strict laminar flow cannot be obtained because some turbulence will exist from any object in the air flow pattern, but with the use of the

HEPA filters even areas of turbulence are being supplied by virtually particulate-free air.

Two major types of laminar flow installations are: vertical (overhead to floor), and horizontal. The vertical is generally more efficient when coupled with constant outflow through a grating floor. This

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**Findings of frightening pertinence have emanated from sophisticated studies of sources and mechanisms of bacterial contamination in operating room suites. Airborne "shedding" has been shown to be a major source of operating-room-acquired infection, more so than transfer from nasal carriers. Bacterial counts rise rapidly as the number and movement of personnel in the operating room increases. Spatially and temporally increased wound exposure, necessary in operations which require implantation of large foreign bodies common in cardiovascular and orthopedic procedures, has amplified the possibility of airborne sources of infection. There has been an increase in deep wound infections caused by organisms formerly thought to be "low virulence" or saprophytic.**

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was the original type used in operating theaters, but it is less practical due to the necessity to wear "space suit" garments to cope with personnel working directly over surgical wounds. In England, Sir John Charnley uses this type, which he augments with a "greenhouse" (room-within-a-room), even isolating anesthesia personnel from the enclosure.

The horizontal system is in more common use, permitting installation as a free-standing unit in most operating rooms. The HEPA filters must be changed every three to five years at a cost of about \$1,000. Pre-filters are changed or cleaned weekly. One model features aspirator units that take air at each corner of the mouths of the operating team

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personnel, exhausting it through tubing to the HEPA filters (Figure 1).



Figure 1. Horizontal type clean air laminar flow unit. HEPA filters and fans are enclosed in metallic frame case with perforated front panelling. Note aspirator unit tubing on back of surgeon's neck, running into manifold and then into HEPA filter unit.

No large studies are available to prove the role of HEPA filtration laminar flow in preventing infection. In Albuquerque, a 54-month assessment of one laminar flow operating room compared to two conventional control rooms resulted in 0.79, 0.93 and 1.14 per cent infection rates respectively, nearly 4,000 operations being performed in each room. Donald G. Fox and Maitland Baldwin at the National Institutes of Health, found that during neurosurgical procedures performed on dogs, levels of airborne contamination averaged 0.05 microorganisms per cubic foot after the installation of laminar flow, whereas former levels ran from 1 to 80 microorganisms per cubic foot. The levels of airborne contamination at the back table, instrument tray and wound site remained constantly low, 0 to 11 organisms per 100 cubic feet. This represents 1.8 organisms per 100 cubic feet, or one organism being recovered during an hour-long procedure. We have monitored our operating room prior to and following the installation of our clean air laminar flow unit, and have found significant decrease in the bacterial colony levels (Figure 2).

Charnley found his infection rate for total hip arthroplasty procedures dropped from nearly 9 per cent to less than 1 per cent in the vertical flow "greenhouse" over an eight-year period. Improved sterile technique, decreased operating time, "space suits," prophylactic antibiotics, and other factors were implemented during that time, which complicates the evaluation of these figures.

CONTAGION COMMITTEE

HOSPITAL SURVEILLANCE REPORT

LAMINAR FLOW STUDY OPERATION ROOM 502

BEFORE INSTALLATION			AFTER INSTALLATION (Continuous Flow)	
8:00 A.M. CLOSED REDUCTION-ARTHROGRAM OF CON- GENITAL HIP DISLOCATION AND APPLICATION OF HIP SPICA			8:00 A.M. CHARNLEY TOTAL HIP REPLACEMENT	
	AVERAGE BACTERIAL		COLONY PER PLATE	
	AIR SETTLE PLATES (10 minutes)	ROOAC PLATES	AIR SETTLE PLATES (10 minutes)	ROOAC PLATES
BEFORE OPERATION (Heavy Traffic)	5	23	2	75
DURING OPERATION (No Traffic)	4	Not done	0.5	Not done
AFTER OPERATION (No Traffic)	4	50	0.4	75

Figure 2. Operating room bacterial colony count before and after installation of clean air laminar flow unit.

Despite the generally impressive record of asepsis resulting from previous advances, further technological progress in prosthetic surgery depends on controlling more variables. Clean air delivery is one such parameter. Ideally, the patient alone will remain as the sole source of possible contamination. Clean air delivery is a valuable adjunct to operating room asepsis and deserves widespread trial application, perhaps permitting movement from antisepsis to asepsis, then to particulate-free surgery. At contemporary rates of \$7 to \$10,000 for a single patient's hospital care for a deep wound infection, sophisticated preventive techniques cannot be ignored.

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# Angina Pectoris

## *Evaluation of Patients with Angina and Selection for Aortocoronary Bypass*

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ALTHOUGH CORONARY ARTERY disease manifests itself in many ways, including acute myocardial infarction, mitral regurgitation, ventricular aneurysm, ventricular septal defect, and cardiomyopathy, angina pectoris is perhaps the most well-known clinical syndrome associated with coronary disease. The recent dismal prognosis associated with angina, as evidenced in the Framingham study,<sup>1</sup> emphasizes not only that better measures are needed to prevent coronary atherosclerosis, but also the need for improved methods in the treatment of patients with existing coronary artery disease. The advent of coronary arteriography and surgical myocardial revascularization procedures have opened new avenues in patient care.<sup>2, 3</sup> Although the long-term results of aortocoronary bypass with the saphenous vein graft are not known, it appears that many patients may receive palliation of angina by this operative procedure.<sup>4, 5</sup> The evaluation and selection of angina patients for aortocoronary bypass is therefore extremely important.

### **Evaluation of Angina**

The present evaluation of patients with chest pain on the Cardiovascular Service at the University of Kansas Medical Center includes a history and physical examination, chest x-ray with a barium swallow and four cardiac views, resting electrocardiogram and vectorcardiogram, glucose tolerance test, and lipid profile, in addition to the routine hospital laboratory tests (*Table 1*). Upper gastrointestinal x-rays, oral cholecystogram, and other studies are done as indicated. A treadmill exercise test is also done on most patients in whom the baseline electrocardiogram does not show resting ischemic changes. Cardiac catheterization includes complete right and left heart pressures, as well as a cardiac output. Selective coronary arteriograms are done using the Judkins' technique and are obtained on 35 millimeter cine film in several planes.<sup>6, 7</sup> A left ventricular cineangiogram is also done.

The arteriograms are evaluated as to the severity of the obstructive lesions in each of the three main coronary arteries and their branches. These essentially include the left anterior descending coronary artery and diagonal branch or branches supplying the anterior left ventricle, the left circumflex coro-

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**The use of aortocoronary bypass as a method of treatment of angina pectoris requires thorough clinical and laboratory patient evaluation including selective coronary arteriograms and assessment of left ventricular function by angiographic and hemodynamic data.**

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nary artery and its main branch, the marginal, which supply the posterior wall of the left ventricle, and the right coronary artery which supplies the posterior and inferior walls of the myocardium.<sup>8</sup> The lesions are graded as mild, when less than 50 per cent obstruction is present, moderate, when approximately 50 per cent narrowing is present, and severe, when greater than 50 per cent obstruction of the lumen is present.<sup>9</sup>

The left ventriculogram is used as a qualitative assessment of ventricular contractility. If the contractility is abnormal as a result of a previous myocardial infarction, chronic fibrosis, or ventricular aneurysm, it is termed asynergy of the left ventricle.<sup>10</sup> Marked left ventricular asynergy is generally an ominous finding with respect to the possibility of aortocoronary bypass. The left ventriculogram and the left ventricular end-diastolic pressure, which is frequently elevated in left ventricular failure, are thus extremely important in the evaluation of a patient for cardiac surgery.

### **Pathophysiology of Coronary Circulation**

Proper interpretation of the coronary angiograms and selection of patients for surgery requires a basic understanding of coronary blood flow. Although

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TABLE I  
EVALUATION OF PATIENT WITH ANGINA

History
Physical exam
Cholesterol, triglycerides
Lipoprotein electrophoresis
GTT
Chest x-ray
ECG
Vectorcardiogram
Treadmill exercise test
Cardiac catheterization
Right heart catheterization—pulmonary wedge pressure
Left heart catheterization—LVEDP
Cardiac output
Coronary arteriogram
Left ventricular cineangiogram

techniques are being developed to measure coronary flow, there is at present no practical, reliable method of evaluation of coronary blood flow in the cardiac patient. Some reasonable deductions can be made, however, based upon evidence in the experimental animal. Sewell has demonstrated that 50 per cent

obstruction of the coronary artery lumen by ligation is necessary before distal hypotension and collateral circulation develop.<sup>11</sup> It can be assumed that at least a 50 per cent narrowing of the coronary artery on the angiogram is necessary, therefore, before a reduction in coronary flow occurs that would produce ischemia.

It is also important to realize the factors regulating coronary flow, which include the diastolic blood pressure—since coronary artery filling occurs in diastole, the diastolic time, and resistance to flow. The resistance to flow is contributed to not only by the status of the main coronary arteries, but the smaller arterioles and the myocardium itself.<sup>12, 13</sup> Thus, a markedly fibrotic left ventricle with extremely poor contractility will produce a greater resistance to flow than a normal or near normal left ventricle. It is also important to have a distal vascular bed without significant areas of obstruction in patients who are candidates for surgery. It is certainly possible that a markedly abnormal left ventricle, as seen on the left ventriculogram, without evidence of a discrete aneurysm, will contribute to decreased blood flow through a saphenous vein graft, and perhaps early vein graft closure, as will diffuse distal coronary artery disease.<sup>14-16</sup>

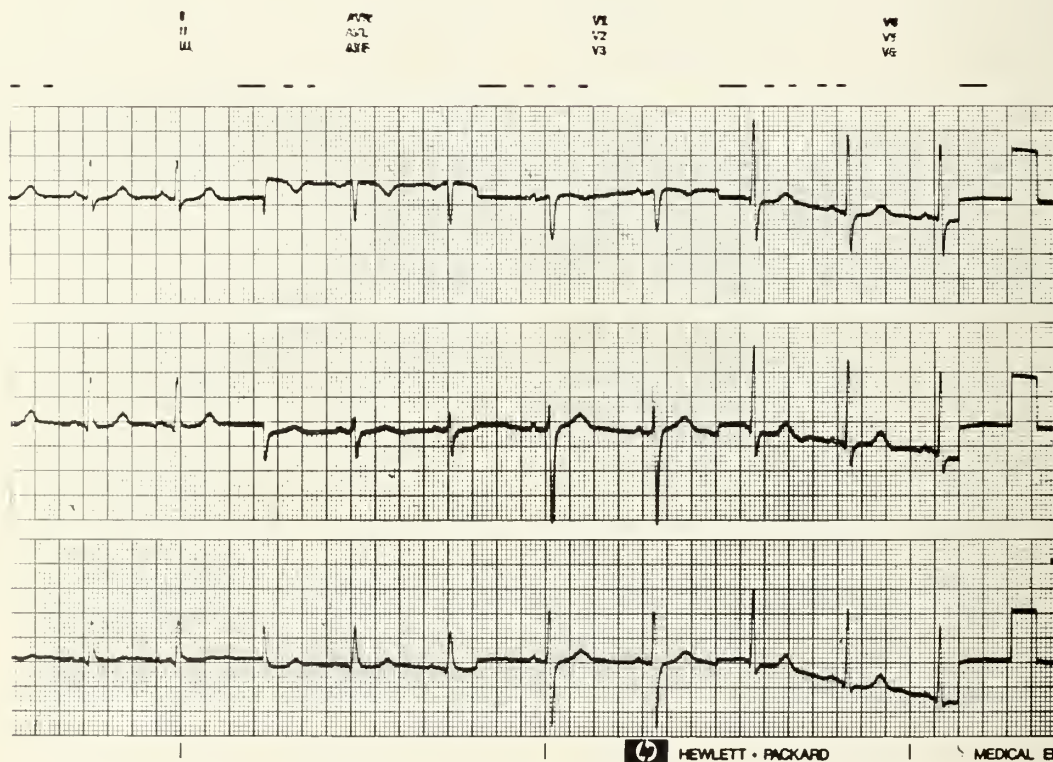


Figure 1. Resting ECG of case example.

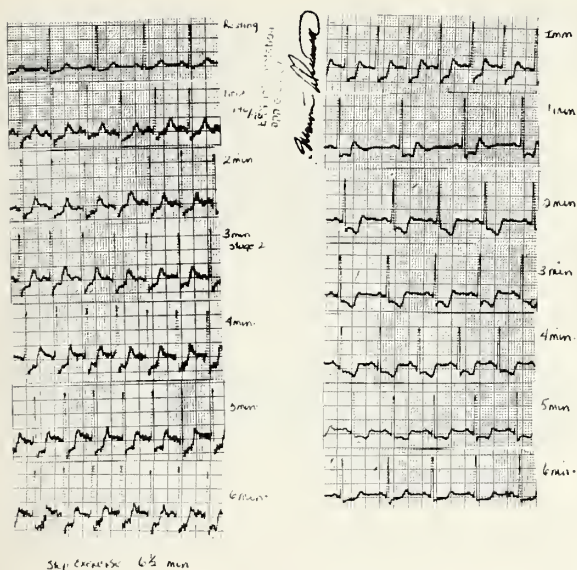


Figure 2. Abnormal preoperative treadmill exercise ECG of case example.

### Value of Aortocoronary Bypass

The long-term results are not known, but approximately 75 per cent of the vein grafts have remained open after one to two years.<sup>17</sup> Although many patients receive relief of the chest pain, more objective information is needed before the saphenous vein graft can be completely accepted as a rational method of treatment. There is some preliminary evidence that some patients who have had saphenous vein graft operations can tolerate greater postoperative work load levels without experiencing angina than was evidenced during the preoperative period. This same effect was not observed with propranolol.<sup>17</sup> The following case example is included to illustrate the use of and potential benefit from the saphenous vein graft.

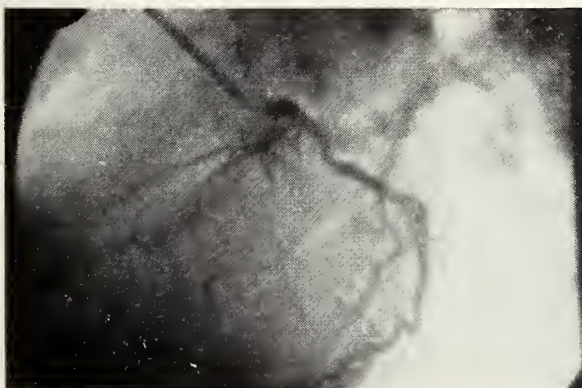


Figure 3. Left coronary arteriogram of case example showing proximal occlusion of the left anterior descending coronary artery (left side of figure) with distal filling and partial obstruction of the left circumflex (right side of figure).

### Case Report

The patient is a 43-year-old male with the chief complaint of chest pain. The patient had chronically complained of "indigestion" after meals. In May, 1971 he began to experience an increase in these symptoms. The chest pain was central, occurred after meals, and seemed to be relieved by antacids. Exertion also precipitated a similar discomfort which radiated to the left arm and was always relieved by rest. Nitroglycerin was of questionable benefit. Other than a history of 30 years of smoking, the remainder of the history was unremarkable. Physical examination was unremarkable, with a normal blood pressure, and no abnormal cardiac findings. The following laboratory studies were normal: UA, CBC, VDRL, glucose tolerance test, BUN, creatinine, cholesterol, SGOT, chest x-ray, oral cholecystogram, resting electrocardiogram, and vectorcardiogram. The lipoprotein electrophoresis demonstrated a Type IV pattern with an elevated triglyceride. An upper GI x-ray demonstrated a small hiatal hernia. A Master's two-step and treadmill exercise test were positive. Cardiac catheterization was done and all right and left heart pressures were normal, including a left ventricular end-diastolic pressure of 6. The coronary arteriogram demonstrated severe three-vessel coronary artery disease with complete occlusion of the left anterior descending, approximately 50 per cent occlusion of the left circumflex coronary artery, and 90 per cent occlusion of the right coronary artery. The left ventricular cine demonstrated satisfactory function. The patient had cardiac surgery with aortocoronary saphenous vein bypass to all three coronary vessels. He has been completely free of chest pain following discharge from the hospital. A treadmill exercise test done approximately three months following the operation was completely normal. Figures 1 through 5 represent this patient's electrocardiograms and coronary arteriograms.

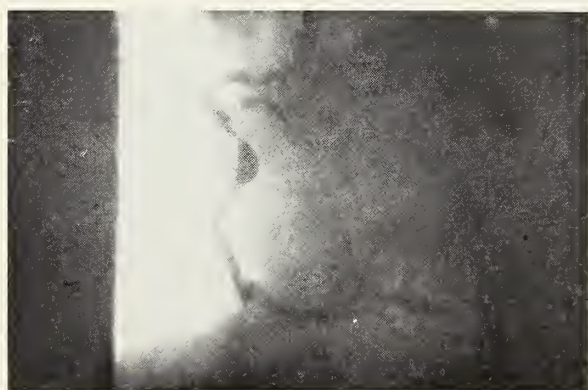


Figure 4. Right coronary arteriogram of case example with high grade proximal obstruction and patent distal vessel.



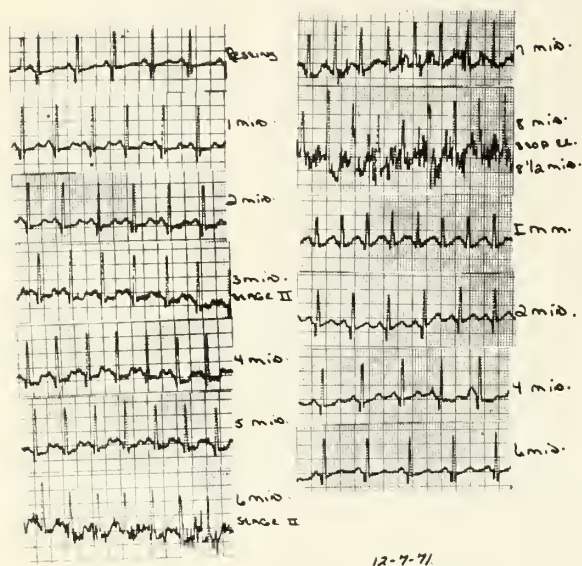


Figure 5. Normal postoperative treadmill exercise test of case example.

### Selection of Patients for Aortocoronary Bypass

Although it is not known which patients will definitely receive benefit from present day bypass procedures using the saphenous vein graft, there is a large group of patients in which it seems the operation is contraindicated. Patients with diffuse coronary disease and a markedly abnormal left ventricle, many of whom have congestive heart failure, seem unlikely candidates for this operative procedure. Figures 6 through 8 represent angiograms from a patient in this category. There is also a group of patients who are potentially "ideal" candidates for saphenous vein graft (Table II). These patients are relatively young, preferably 50 years old or younger,

TABLE II  
"IDEAL" CANDIDATE FOR  
AORTOCORONARY BYPASS

Recent onset or progression of angina  
High grade proximal stenosis of one or more major coronary arteries and normal distal vessels  
Normal left ventriculogram  
Normal hemodynamic data—LVEDP

with severe angina and high grade proximal obstruction in a major coronary artery with near normal or normal distal vessels, resting hemodynamics, and left ventricular function. Figures 9 and 10 are angiograms from this type of patient. Most patients, however, are usually between these two groups, such as the patient presented in the case example. It is often difficult to decide how these patients should be managed. Certainly more objective data is needed before any definite conclusions can be made.

Whether or not patients with acute "impending" myocardial infarction are candidates for saphenous vein graft operations at the present time is not known. Although it seems logical that they might well be candidates, particularly if it could be demonstrated that it would prevent a myocardial infarction, this information is not known at the present time. A number of patients who fall into this category, however, have successfully had angiograms and myocardial revascularization by the present day technique using aortocoronary bypass, which proves at least that it can be done and may prove to be the treatment of choice in the future.<sup>18</sup>

Another perplexing problem is the asymptomatic patient with a high grade proximal left anterior descending lesion. Although the patient is asymptomatic, the potential lethal implications of such a le-

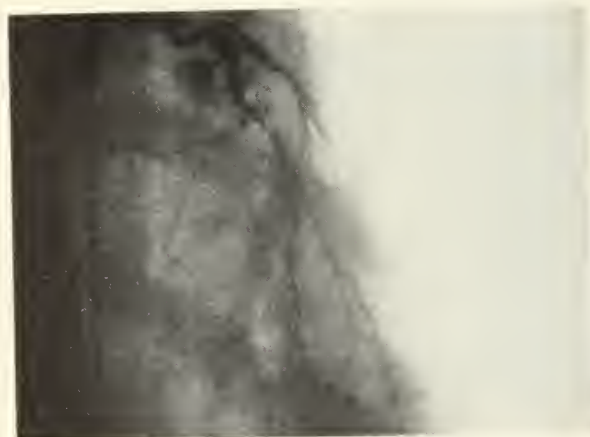


Figure 6. Left coronary arteriogram showing diffuse disease.

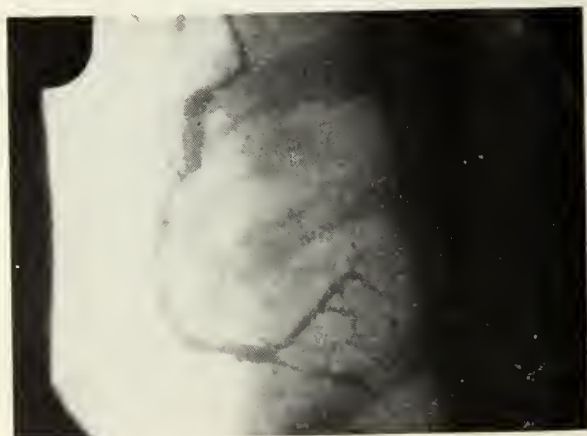
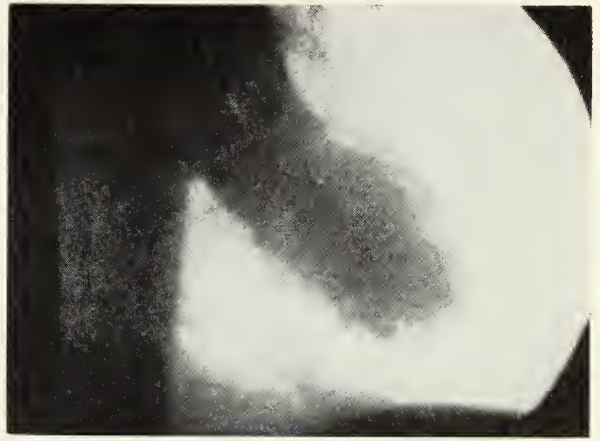


Figure 7. Right coronary arteriogram showing diffuse disease.





A



B

Figure 8. Abnormal left ventricle during diastole (A), and systole (B), in a patient with diffuse disease.

sion make one at least consider this type of patient as a potential candidate for aortocoronary bypass. At present, however, it is demanded that patients have angina before consideration is given to operative intervention.

### Conclusion

In the future, it will be essential to restudy patients who have had aortocoronary bypass procedures by exercise tests and angiography, as well as follow the long-term clinical results and compare them to the results in a similar group of patients that have not been treated by surgery. It is also going to be important to clinically classify angina patients when first encountered, so that the follow-up evaluation and therapy have a more significant meaning. Such a classification has been suggested which can be used for such purposes and includes Stage I, which is an asymptomatic patient with evidence of arteriosclerotic heart disease illustrated by electrocardiogram or cardiac catheterization; Stage II, which is angina pectoris relieved by medication; Stage III, angina pectoris not relieved by medication; and Stage IV, angina pectoris not relieved by medication, with abnormal hemodynamic findings.<sup>19</sup> Although there are many unsettled questions, the challenge that exists for the future makes this a very exciting era in the field of cardiovascular disease.

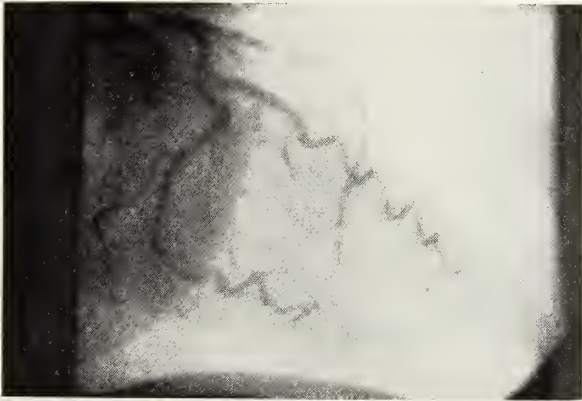
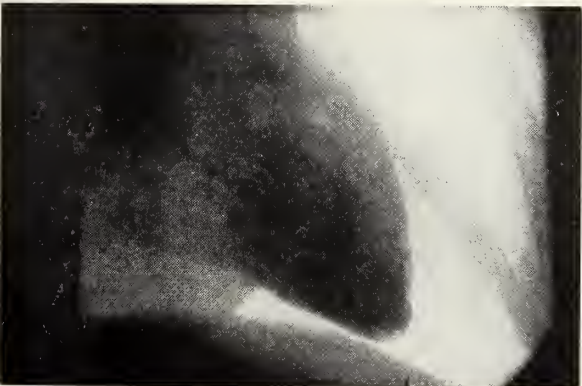
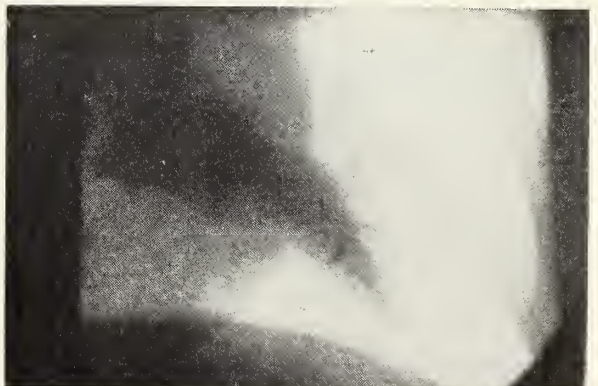


Figure 9. Left coronary arteriogram of "ideal" patient for aortocoronary bypass with almost complete occlusion of the left anterior descending coronary artery and otherwise normal vessels.



A



B

Figure 10. Normal left ventricle during diastole (A), and systole (B), in "ideal" patient for surgery.

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## Dupuytren's Contracture

(Continued from page 111)

proves recurrence rates consists of not only removal of the area of contracted aponeurosis and abnormal fibrous tissue, but also excision of the overlying skin and subcutaneous tissue in the involved area. Full thickness grafts are used to resurface the defect.

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## Vox Dox

### Vox Dox Editor:

I would like for you to run the following in the section of your journal: Letters-to-the-Editor. Hopefully physicians will respond to this.

I am editing a book on the role of faith or religion in healing from a physician's standpoint. Any physician interested in contributing to this book, please write to the following address:

Claude A. Frazier, M.D.  
4-C Doctors Park  
Asheville, N. C. 28801

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## KANSAS CHAPTER OF THE AMERICAN COLLEGE OF SURGEONS

All members of the American College of Surgeons actively participating in Kansas are eligible for membership in the state chapter. Merely write to the Secretary-Treasurer, J. W. Graves, M.D., 3244 E. Douglas, Wichita, Kansas 67208, for enrollment to membership and the dues.

At the last meeting of the Kansas Chapter of the American College of Surgeons held in Emporia, on October 9, 1971, the following new officers were elected:

President:	William E. Mowery, M.D., Salina
President-Elect:	Albert E. Bair, M.D., Independence
Secretary-Treasurer:	Jack W. Graves, M.D., Wichita
Councilors:	Robert M. Brooker, M.D., Topeka
	Charles R. Jackson, M.D., Wichita
	Stanley L. VanderVelde, M.D., Emporia

The next meeting will be held in Salina, two weeks following the national meeting. All members in the College will be notified of the forthcoming meeting.



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## *The President's Message*

The March JOURNAL OF THE KANSAS MEDICAL SOCIETY traditionally has been the Kansas University Medical Center issue. The contents of this number reflect the excellence of our Medical Center. The scope of the papers and the scientific content indicate that we are fortunate in having such an outstanding educational institution. Kansas medicine is known throughout the United States and in many foreign countries for its innovative concepts in providing care to the public, in the postgraduate training program a model for the nation, and for the educational and scientific programs on the campus. Kansas physicians can be proud that our state—though not among the largest—is a leader in medical education and research. I join with our readers in congratulating the editor, Dr. David Gray, and the staff of KUMC for this annual contribution.



*Dr. J. Reale, M.D.*

*President*



## *Pass the Word*

The medical profession is frequently the recipient of unjustified criticism but it must be admitted that in one area at least it has not been chastised as it deserves. We refer to the poor record (pun intended) for communication between physicians about mutual patients. The net effect of the delays, oversights, and inefficiencies in moving patients from one area of care to another is nowhere recorded so far as we know but it must be significant. The concept of waiting for him who is without sin to come along to start the stone-throwing is noble but promotes the continuation of sin. With the qualification that a sinner may have a better idea of why the stones ought to be thrown in the first place, we venture to broach the subject.

This phenomenon of noncommunication has several manifestations. There is the patient who arrives on the consultant's doorstep without prior warning or information; the patient who arrives back on the referring physician's doorstep without support of opinion or advice of the consultant; the hospitalized patient whose record is virginal (except for the order to have the consultant see the patient); or the similarly unsullied consultation form from which the attending physician would never know the consultant had been around—except for the patient's disgruntled report that some joker came in, poked around, harrumphed, and walked out.

It is strange that over the centuries a consistent and effective method of transmitting information about patients has not evolved. This is probably because it is basically an extension of record keeping, and in spite of numerous demonstrations of the value of good patient records over the same centuries, the business of keeping a good record has always been the bane of the physician's professional activity. It takes a certain amount of time and mental discipline to make a proper note of the pertinent facts about the patient. After all, we know about the patient and assume that 1) we'll never forget anything, and 2)

everyone else must know about it—and has nothing else to think about. Fundamentally, a physician feels like a physician only when he is actively applying his efforts to the patient. The paper work (read record-keeping) is an annoying if essential incursion on this hallowed pastime. To advise the patient to take two aspirin and get plenty of rest is excellent advice. To write down that the patient was advised to take two aspirin and get plenty of rest is a nuisance and easily put off to a more convenient time. To give a consultant some formal and prior notice that the patient was advised to take two aspirin and get plenty of rest and still has the pip is not only additional bother, but we're busy right now and we'll get to it when we can and, anyway, he can figure out what is wrong, that's why he's getting that fat consultation fee.

As the practice of medicine has come to involve an ever-increasing variety of tests and examinations, it constricts the problem unrealistically to consider it only a physician-physician matter. All the ancillary personnel occupy consultants' roles in one way or another. They all can contribute more to the patient's welfare if they have a more complete picture of the case, but brevity of communication is the order of the day. The request form provides space for the barest of information and that's what it receives. The reports are terse and stereotyped, fitting the patient to the mold of the diagnosis rather than applying the diagnosis to the person of the patient. And as the forms pile up, it becomes a major project to see that the patient is equipped with his full quota if he is passed on to a consultant.

Complaints of overspecialization leading to too many referrals actually are complaints that the patient feels rejected in his pursuit of medical care. If he can see in the process continued interest and a genuine effort to return him to health, he is not likely to object. There is no doubt that the strength of the medical case is in the personal approach of the individual

physician to the individual patient. This strength has been demonstrated, not in the prevention of change—the whole social political structure is changing and taking the medical world with it—but in the fact that the medical profession has not been forced into a more disagreeable position than it has. The fact that evolution rather than revolution is at work is due to the feeling of most patients that their physicians have their personal interests at heart.

Perhaps, instead of extracting promises from medical students that they will practice in Sandy Flats for five years or treat families, whole families, and nothing but families, we should get them to swear that they'll keep up their records and transmit them promptly as indicated. Certainly, the matter warrants the consideration of the teaching institutions, preceptors, and other molders of the young. For some of us it is probably too late. Meantime, we could fall back on that quaint old behavioral concept, courtesy. Courtesy to the consultant, to the referring and conferring physician, to the ancillary personnel—even courtesy to the patient. But then courtesy has long been known to be one of the thinner spots in the veneer of civilization.—*D.E.G.*

## Kansas Press Looks at Medicine

### SURELY ONLY A MINORITY, DOCTOR!

A lieutenant of Ralph Nader has dropped a bombshell among the American public, charging that "at least 10,000" in this country die each year as the result of unnecessary surgery.

This kind of talk only adds to the discomfort of thousands of ill people who have no reason to mistrust their doctors, but have heard that type of "they say" rumors that the ranks of the profession are replete with surgeons who are too free with the scalpel.

Just as there are shysters among the attorneys, crooked politicians, sinful ministers, gouging storekeepers—and yes, irresponsible newspaper people—medicine, by the normal ratio of imperfection, no doubt has its incompetents who have in some manner departed from their accountability under the Hippocratic oath, or lost their reason before they lost their practice.

This should be a tiny minority, however.

But Dr. Sidney Wolfe, a representative of Nader's Health Research group, speaks of two million unnecessary operations annually.

It would take an army of 5,000 inept surgeons performing such operations at the rate of more than one a day each to rack up such a score. Any way you divide it up, it seems incredible.

Wolfe, testifying before the Commission on Medical Malpractice, said the fatalities resulted from tonsil-

lectomies and adenoidectomies as well as the more intricate operations.

The commission is holding hearings to study and propose solutions to the malpractice problem, which is part of the current health care crisis. The American Medical Association points out some means must be found to provide equitable protection for the patient and the physician alike, as cost of malpractice insurance and lawsuits now is costing all patients in the form of higher medical bills, health insurance premiums and taxes.

Nader's man said he got his figures from a book written by a "highly respected surgeon" who used the pseudonym Dr. Lawrence Williams—but that he feels they are too conservative.

The book apparently caused little stir. But by leveling such a wholesale indictment without independent investigation and supportive evidence is a rank disservice to the medical profession and its patients' trust.—*Topeka State Journal*, Topeka, Dec. 23, 1971.

### MIXED EMOTIONS

It is easy to claim, quiet honestly, to have mixed emotions about almost anything in this day and age of confusion in government, in attitudes and philosophies.

But we can claim to a genuineness of mixed emotions in regard to the federal government's telling doctors how much they can increase fees.

We have, as you know, raised some questions ourselves about the rapid increase in doctor's charges and the overall cost of health care. We do not retreat from that position.

But to accept the idea that a Washington bureaucrat can tell our personal physician (or your personal physician) what he should charge us for his services makes a small cold chill run up our backs.

We have long been critical of the American Medical Association for its narrow attitude and its closed mind toward other disciplines which might contribute to the total healing art. Yet in this one matter, we find ourselves aligned with the AMA against federal intervention in the relationship between physician and patient.

As a matter of fact, the longer Phase II runs on and the more we read about the widely varying ways different prices and wages are being handled, the less we approve of the whole program. For a short 90-day period, we think it was excellent. But as with so many things, no one would leave well enough alone so now we have the greatest hodgepodge of wage and price control in history. We hope that the medical profession can somehow defend itself against this ridiculous interference from untrained, unskilled bureaucrats.—*Dodge City Daily Globe*, Dodge City, Dec. 29, 1971.



## REORGANIZATION OF ADMINISTRATION AT K.U.M.C.

A major reorganization of administrative responsibilities at the University of Kansas Medical Center divides the functions of the traditional medical school dean into several key areas and creates five full deanships with decision-making capability for each of them.

Two new positions have been created, to be assumed by present faculty members. Dr. Kermit E. Krantz was named Dean of Clinical Services in addition to his duties as Professor and Chairman of Gynecology and Obstetrics. A faculty member at Kansas for 13 years, Dr. Krantz has B.S., B.M., M.S. and M.D. degrees from Northwestern University. Dr. Dante G. Scarpelli, Professor and Chairman of Pathology and Oncology, becomes Dean of Faculties and Academic Affairs, as additional duties. At Kansas five years, Dr. Scarpelli has M.S., M.D. and Ph.D. degrees from Ohio State University.

Promoted from Associate to Dean of Student Affairs is Dr. David Waxman, whose bachelor's and medical degrees are from Syracuse University in New York. Promoted from Assistant to Dean of Admissions is Dr. Dwight J. Mulford, faculty member for 22 years. His bachelor's degree is from Greenville College in Illinois. His Ph.D. is from St. Louis University. Promoted from Assistant to Dean of Research is Dr. Paul R. Schloerb, faculty member for 20 years. His bachelor's degree is from Harvard; his medical degree is from the University of Rochester in New York. Dr. D. Cramer Reed is Dean of the Wichita State University Branch of the Medical Center, a post to which he was appointed last September.

Dr. Russell C. Mills, presently Associate Dean, becomes Associate Vice Chancellor for Facilities and Program and Resource Development. A member of the faculty since 1946, Dr. Mills has held administrative positions since 1962. His B.S., M.S. and Ph.D. degrees are from the University of Wisconsin.

Mr. J. Howard Feldmann, currently assistant for budgetary affairs, becomes Assistant Vice Chancellor for Fiscal and Personnel Coordination. His bachelor's degree is from Central College in Fayette, Mo., and his master's is from the University of Missouri at Columbia.

Appointed Assistant Vice Chancellor for Affirmative Action Programs is Mr. Chester J. Rempson, from the staff of the University of Chicago.

## NOMINATING COMMITTEE

The Nominating Committee met on Sunday, February 13, 1972, and submits the following list of nominations for the elective offices of the Kansas Medical Society. Wherever more than one nomination appears these are presented in alphabetical order. A very brief biography accompanies each name.

### President-Elect

**Thomas F. Taylor, M.D., Salina.** Born in 1926. Graduated from the University of Kansas School of Medicine in 1953. This year served as First Vice-President. Has served as Speaker of the House.

### First Vice-President

**John N. Blank, M.D., Hutchinson.** Born in 1907. Graduated from the University of Kansas School of Medicine in 1938. Is serving as president of the Kansas State Board of Health. Is past president of the Kansas Academy of Family Practice.

### Second Vice-President

**Alex Scott, M.D., Junction City.** Born in 1923. Graduated from the University of Wisconsin School of Medicine in 1948. Has served as Councilor.

**Eugene T. Siler, M.D., Hays.** Born in 1924. Graduated from the University of Kansas School of Medicine in 1952. Is serving as Councilor for District 13.

**John W. Travis, M.D., Topeka.** Born in 1929. Graduated from the Northwestern University School of Medicine in 1955.

**Emerson D. Yoder, M.D., Denton.** Born in 1914. Graduated from the University of Kansas School of Medicine in 1949. Is now serving as Constitutional Secretary.

### Constitutional Secretary

**Phillip A. Godwin, M.D., Lawrence.** Born in 1928. Graduated from the University of Kansas School of Medicine in 1955.

**John D. Huff, M.D., Kansas City.** Born in 1921. Graduated from the University of Kansas School of Medicine in 1952. Is currently serving as Councilor for District 2.

**Robert P. Stoffer, M.D., Halstead.** Born in 1926. Graduated from the University of Kansas School of Medicine in 1948.

### Treasurer

**Chester M. Lessenden, Jr., M.D., Topeka.** Born in 1918. Graduated from the University of Kansas School of Medicine in 1943. Is now serving as Treasurer.

### AMA Delegate

**George E. Burket, Jr., M.D., Kingman.** Born in 1912. Graduated from the University of Kansas School of Medicine in 1937. Has been President. Is now AMA Alternate Delegate.

**James A. McClure, M.D., Topeka.** Born in 1918. Graduated from the University of Kansas School of Medicine in 1944. Has served as President.

### AMA Alternate

**Herman W. Hiesterman, M.D., Quinter.** Born in 1923. Graduated from the University of Kansas School of Medicine in 1951. Is currently serving as Councilor for District 16.

**M. Robert Knapp, M.D., Wichita.** Born in 1923. Graduated from New York College of Medicine in 1947. Is now serving as Vice-Speaker.

**George D. Marshall, M.D., Colby.** Born in 1909. Graduated from the University of Kansas School of Medicine in 1936.

**Evan R. Williams, M.D., Dodge City.** Born in 1925. Graduated from the Northwestern University Medical School in 1952. Has served as Councilor.

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## SWINGING AMBASSADORS



President's Banquet  
Tuesday, May 9, 1972



# The Month in Washington

In his fiscal 1973 budget, President Nixon estimated federal spending on HEW health programs at \$18.1 billion, an increase of \$1.1 billion over the current fiscal year which ends next June 30.

The President's Council of Economic Advisers, in its annual report to Congress, cautioned that money alone does not hold the solution to the nation's health problems. New criteria for evaluating medical care should be developed, the council said.

The council said that the nation's medical care expenditures totaled \$75 billion—\$358 per person—in fiscal year 1971, an annual growth rate of 4.3 per cent per capita since 1966.

"Although improvement in the health of the population was clearly the ultimate goal of these expenditures," the council said, "it is also true that the relation between good health and medical expenditures is less than direct. First, our medical dollars may not always be used effectively. Ideally, the preferences of consumers and capabilities of suppliers freely interact in the market to determine the price and amount of the commodity consumed; and this interaction leads to the use of resources that best contributes to the material well-being of people. In the case of medical care, however, distortions in this process occur because, on the demand side, consumers are not always able to judge the service, and, on the supply side, competition is often limited by restrictions on entry into medical practice and hospital services. Although these restrictions may have been intended to protect consumers, as a side effect they may also impede the efficient utilization of resources. In addition, the dominant position of nonprofit organizations in the market providing hospital services raises other questions about whether incentives to minimize costs are as great in medicine as in other parts of the economy.

"Yet even great improvements in the market for medical care would not solve all health problems. Another important problem arises because good health is related to many factors in addition to medical care. Some of these factors are subject to an individual's control: diet, exercise, smoking, and consumption of alcohol. Other conditions, such as the amount of pollution in the air and water, depend rather on the actions of society as a whole. In addition, there are more elusive influences, like the tension generated by attitudes toward work and other circumstances of modern life. The importance of

life styles and environment to health has become much more apparent in recent years.

"To start to answer the general question of how we can best 'produce' health, we must find a way of measuring changes in the level of health. What must be measured is the actual output—health—not simply such inputs as amounts of medicine consumed, days spent in hospitals, or the hours in consultation with doctors. While no comprehensive measures of the national health have been developed, and each existing measure has its limitations, such indicators as mortality rates and disability days have been widely used to trace changes over time and to compare localities. The relationships observed between these measures of health and other variables have revealed a number of paradoxes. . . ."

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The federal government announced the first assignments of federal doctors and other health workers to provide direct patient care in rural and big city areas with critical health manpower shortages.

Teams with a total of 68 medical workers, including doctors, dentists and nurses, will be assigned to 18 communities in 13 states to work with such patient groups as Indians, migrant workers, welfare families and minorities.

The first team, a husband-wife, doctor-nurse duo, was assigned to a 14-bed hospital in rural Jackman, Maine, in September. The second team went to work in Immokalee, Fla., in November. March 1 is the target date for assigning the other 16 teams, a spokesman for the National Health Service Corps said.

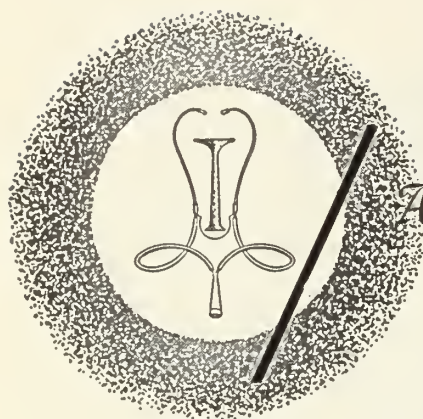
The Corps was created Dec. 31, 1970, when President Nixon signed the Emergency Health Personnel Act, which calls for government health workers to provide direct health services to residents of city slums and remote rural areas designated as having critical health manpower shortages.

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The Nixon Administration said that it hopes to transfer eight U. S. Public Health Service (PHS) hospitals and 30 government clinics to local control by June 30, 1973.

Health, Education and Welfare Secretary Elliot L. Richardson said President Nixon's budget for the fiscal year beginning next July 1 "assumes that these facilities will be converted to community use by June 30, 1973."





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### MARCH

- Mar. 13-15 American College of Surgeons. Joint meeting, nurses/doctors. Sectional Meeting. Bellevue-Stratford Hotel, Philadelphia.
- Mar. 16-17 25th National Conference on Rural Health, sponsored by the AMA's Council on Rural Health. St. Francis Hotel, San Francisco.
- Mar. 16-18 17th Annual Central Florida Medical Meeting. Contemporary Hotel, Walt Disney World, Orlando, Florida. AAFP credit. For details write: E. J. Edwards, 800 N. Mills Avenue, Orlando, Florida 32803.
- Mar. 17-18 Midwest Cancer Conference. Broadview Hotel, Wichita. See announcement on pages 9, 101.
- Mar. 18 American College of Physicians. Nebraska Regional, Omaha. For details write: John D. Hartigan, M.D., 107 W. 17th St., Omaha, Nebraska 68102.
- Mar. 23-25 Mid-Central States Orthopaedic Society 19th Annual Meeting. Sheraton, Little Rock. For details write: Mrs. O. L. Lovan, 14 Douglas Parkway, Wichita, Kansas 67206.
- Mar. 23-26 Athletic Injury Briefings, National Coaches Conference. University of Notre Dame. Write: Notre Dame Center for Continuing Education, South Bend, Indiana.
- Mar. 31-Apr. 1 7th Annual Teaching Days in Sports Medicine, University of Wisconsin, Madison. For details write: Dept. of Postgraduate Medicine, 610 N. Walnut, Madison, Wisconsin 53706.

### APRIL

- Apr. 5-6 American Geriatrics Society 29th Annual Meeting. Americana Hotel, New York City. For details write: Edward Henderson, M.D., 10 Columbus Circle, New York, New York 10019.
- Apr. 7-14 International Academy of Proctology, 24th Annual Congress and Teaching Seminar. Town and Country Hotel, San Diego. For details write: Alfred J. Cantor, M.D., 147 Sanford Avenue, Flushing, New York 11355.
- Apr. 17-20 American Industrial Health Conference. Bellevue-Stratford Hotel, Philadelphia. For details write: American Industrial Health Conference, 150 N. Wacker Drive, Chicago, Illinois 60606.
- Apr. 19 Pediatric Orthopedics Workshop. The Children's Hospital, 1056 East 19th Avenue, Denver, Colorado 80218.
- Apr. 22 3rd Annual Arthur E. Hertzler Memorial Lecture. See announcement on p. 139.
- Apr. 24-27 Pediatric Cardiology. Annual Spring Session, the American Academy of Pediatrics. Town and Country Hotel, San Diego.

### MAY

- May 1 Student American Medical Association, 22nd Annual Meeting. Biltmore Hotel, Los Angeles. For details write: Robert L. Jonsson, 1400 Hicks Road, Rolling Meadows, Illinois 60008.
- May 1-3 American College of Sports Medicine, 19th Annual Meeting, Philadelphia. For details write: Donald E. Herrmann, 1440 Monroe, Madison, Wisconsin 53706.

May 5 Pediatric Surgery, 10th Annual Pediatric Seminar. Baptist Memorial Hospital, Kansas City, Missouri. For details write: William McEachen, M.D., 6601 Rockhill Road, Kansas City, Missouri 64131.

May 12 Pediatric Otolaryngology Workshop. The Children's Hospital, 1056 East 19th Avenue, Denver, Colorado 80218.

### POSTGRADUATE EDUCATION

#### University of Kansas:

See announcement on page 115.

#### University of Colorado:

Mar. 27-30 *Trauma*

Apr. 27-29 *Clinical Dermatology for the Family Physician*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 80220.

#### University of Missouri-Columbia School of Medicine:

Apr. 5-6 *18th Annual Urology Seminar*

Apr. 7-9 *Ambulatory Care*

Apr. 10-11 *The Stroke Patient*

Apr. 19-20 *Emphysema and Histoplasmosis*

For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.

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## The Third Annual ARTHUR E. HERTZLER MEMORIAL LECTURE

**April 22, 1972—Halstead, Kansas**

### MANAGEMENT OF COMMON EMERGENCIES

Hugh E. Stephenson, Jr., M.D., *University of Missouri School of Medicine*

John A. Grove, M.D., *Newton, Kansas*

Clifford W. Gurney, M.D., *Kansas City, Kansas*

Hubert M. Floersch, M.D., *Kansas City, Kansas*

William O. Rieke, M.D., *Kansas City, Kansas*

*A.A.F.P. Credit*

For details write: Mr. W. L. Schaake, 309 Main, Halstead, Kansas 67056



EARL L. MILLS, M.D.

Dr. Earl L. Mills, of Wichita, died January 22, 1972. He was 68. Dr. Mills was born in Penasola, Kansas. He was graduated from the Washington University Medical School, St. Louis. He had attended postgraduate courses at the London Postgraduate Medical School in England. He had practiced in Kansas since 1929.

Contributions in memory of Dr. Mills may be made to the Medical Society of Sedgwick County Medical Careers Loan Fund.

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J. H. A. PECK, SR., M.D.

Dr. James Haddon Allen Peck, of St. Francis, died January 19, 1972. He was born in Mt. Vernon, Missouri on June 16, 1892.

Dr. Peck was graduated from the Northwestern University School of Medicine in 1921. He established his practice in Kansas in that same year.

Surviving Dr. Peck are a daughter and a son.

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ALLEN W. SANDIDGE, M.D.

Dr. Allen W. Sandidge, 72, died January 9, 1972 in Mulberry. He was born in Mulberry, and began his practice there after obtaining his degree from the University of Kansas School of Medicine in 1921.

Survivors include his wife and a son. The family suggests memorials may be made to the Mt. Carmel Medical Center Educational Fund.



# Woman's Auxiliary

## *. . . Auxiliary Annie Admits She's a Sinner*

Lots of things have been said about money, or the lack of it, from "Them that has, gits," to a little comparison of that handy green stuff with the scarlet roots of evil.

Auxiliary women think about money, too, aside from their usual preoccupation with home, clothes, travel, or those family related things, I mean. They pay dues, of course. And they have money-making projects to keep some of their programs going. And they make donations, especially to the Memorial Loan Fund and AMA-ERF.

"The Memorial Loan Fund," you say. "I didn't know they had one. And why do they have that if they have AMA-ERF?"

It's simple, really. When the Memorial Loan Fund was established years ago as one of the Auxiliary's first projects, and incidentally as the first "liberated" attempt to break away from a tea-party, book review type group, there was no AMA-ERF. When the latter was first introduced a few years back, it was a loan fund for students. Later on the "research" was added. AMA-ERF money goes to the medical schools for whatever use the dean wishes to make of it in student loans and grants, or special research and equipment.

The Memorial Loan Fund was started as a nursing scholarship fund. Memorials were made to members or their families. Later it was changed to include loans to all the allied health fields. Some auxiliaries like to give to this fund as well as to the AMA-ERF fund because it serves a different need.

What am I getting at? We need to spread the word a bit more about the money that is available. We have approximately \$1300 in reserve for loans. Last year only two, totaling \$800, were made. We have a feeling that there are students in Kansas who need the loans and don't know where to get them.

So, doctor, if you know of a worthy allied health

student who needs a hand, here is where he or she can get it. There are a few rules, however. The applicant must have first completed two years of the selected course of four years or more. Loans to three-year nursing courses will be granted if the applicant qualifies with the loan fund rules and the hospital requirements. No loan shall exceed \$300 a year, with a maximum of \$500 to any one student. No interest is charged unless the loan is not paid within a year after training is completed, then 5 per cent is added. If a student terminates his studies for any cause other than graduation, the note is due and payable, and the 5 per cent interest starts at once.

Procedure for obtaining the loan is simple. Application must be made to the Medical Auxiliary in the student's area, or to the Medical Society of that area. If approved locally by the county president or the loan fund chairman, information blanks are provided. The application blanks to the state chairman must be signed by the local auxiliary president and the elected local sponsor, and then sent to the state chairman for her signature as final approval. A medical blank, transcripts of schools, recommendations of two school instructors and two businessmen are also required. For a list of these write:

Mrs. Jack E. Lungstrum  
302 West Park Lane  
Salina, Kansas 67401

Many worthy students are unable to borrow money elsewhere. So if good old money, or the Memorial Loan Fund and other money-making or lending projects can be called "the root of all evil," then maybe you should call Annie and the Auxiliary a bunch of sinners!

Auxiliary Annie



# How to Say What You Mean

Do you understand what the following sentence means? "Upon the advent of the investigator, his hegemony became minimally coextensive with the areal unit rendered visible by his successive displacements in space."

Translated into plain, everyday English, it simply means, "He came, he saw, he conquered."

Now, look at that first sentence again.

There's nothing grammatically wrong with it.

All of the words can be found in the dictionary. The sentence can be diagrammed. The only trouble, apparently, is that nobody can understand it.

Too many people make the same mistake. They use gobbledy-gook when they should be using plain, ordinary English. And the consequences of faulty communication can be disastrous—for the student who submits a paper, for the housewife who addresses a P.T.A. meeting, for the businessman who dictates a letter.

To get your ideas across, properly and persuasively, semanticists and psychologists recommend that you follow these five rules:

1. *Avoid words that are too familiar—or not familiar enough.* Words that are heard too often end up by not being heard at all. They make no mental impression. They are stale, lifeless, "blah." Nowadays, perhaps the most overworked word in the entire English language is "fabulous," but no doubt you have heard of the fellow who said that the two most overused words were "great" and "lousy." (He was asked, "What are they?")

On the other hand, don't go too far out of your way to use unfamiliar words either—like "teleological," or "entity." If you have something worthwhile to say, you don't have to deck it out in dazzling clothing.

2. *Don't confuse or misuse words.* Even one of America's greatest writers has confused words. William Faulkner, in his novel *Requiem for a Nun*, consistently used the word "euphemistic" when he meant to use the word "euphonious." ("Euphemistic" means substituting a mild expression for one that might be unpleasant; "euphonious" means having a pleasant sound.)

It's easy to make a mistake. A "Breton" lives in Brittany, France; a "Briton" lives in Great Britain. A "correspondent" is someone you communicate with; a "corespondent" is a person involved in a divorce suit. "Enormous" means large; "enormity" implies something horrible. "Sensuous" means pertaining to the senses; "sensual" means voluptuous. "Ingenious" means imaginative; "ingenuous" means naive.

All of these words are deceptive because they are similar to other words with different meanings. But there are also words that people simply misuse. A "fulsome" speech is an offensive speech. A person who "tinkers" with a radio is doing a *bad* job of trying to repair it. Most Scotsmen don't appreciate being called Scotch—that's the name of a whiskey. A person who is "masterful" is domineering.

As the saying goes, "When in doubt, look it up or leave it out."

3. *Be terse.* Use one idea to a sentence. And the reason is that it is easier to understand something that is brief.

For a long time, for instance, it was thought that all legal contracts simply had to be long-winded and difficult to understand. But now even this is changing. The Equitable Life Assurance Society of the United States, which issues a large share of the world's insurance-policy contracts, now is issuing a new, letter-sized contract that has reduced the number of words by no less than 20 per cent. These new contracts not only provide protection for the policyholder; they also make it easier for him to understand exactly what the protection is.

Here's an example of how the word-count was reduced and comprehension increased:

*Before:* Any indebtedness to the Society existing against this policy at its maturity may not be repaid in cash, but shall be deducted in a single sum in any settlement hereunder.

*After:* Indebtedness will be deducted in a single sum in any settlement.

4. *Recognize the connotation of a word as well as its denotation.* A word's denotation is what it means precisely. Its connotation is what it suggests. And if you want to make friends instead of enemies, and persuade people to your persuasion, it would help if you recognized the emotional implications of the words you use.

Take the word "mother." It suggests many more things than the word "woman," or "parent," or "relation."

As John B. Opdyke, the language expert, has said, "house for sale" is cold—but "home must be sacrificed" is expressive. The same holds true for "infants' wear" and "togs for tots"; "janitor" and "sanitary engineer"; "open to parents" and "fathers and mothers welcome"; and "automobile" and "jalopy."

If you don't understand the difference between denotation and connotation yet, try calling a woman "fat" instead of "plump."

5. *Seek simplicity.* Of all the words in Webster's *New International Dictionary*, only one out of ten

comes from the Anglo-Saxon (old English). Yet these are the most essential ones—they are the short, hard, gritty words, the words that bite. (Examples: “the,” “short,” “hard,” “gritty,” “words,” “that” “bite.”)

According to Malcolm Cowley, the literary critic, most good writers use six Anglo-Saxon words for every one that comes from Greek or Latin. Anglo-Saxon words add clarity and strength to your speech or your writing. You don't have to recognize words of Anglo-Saxon origin. Just make sure that whenever you can use a word of one syllable in place of a word of three syllables, do it.

Now if you follow these five rules carefully, you won't necessarily become a Daniel Webster or a William Shakespeare. But these rules *will* help you avoid embarrassment, put the most pleasing aspect on your words, add interest to what you say, and—most important of all—help get your ideas across.

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### **CALIFORNIANS REPORT PROGRESS TOWARD DEVELOPMENT OF “ARTIFICIAL PANCREAS”**

Scientists at the University of Southern California think they may be well on the way toward developing an implantable “artificial pancreas” capable of automatically releasing the exact amount of insulin needed by the patient at any given moment.

The device could be available within four or five years if the project can get about \$1 million in development funds, according to Dr. Samuel P. Bessman, professor and chairman of the department of pharmacology.

The key element is a sensor which signals the sugar content in blood and body fluids. This would do away with the need for urine tests which, Dr. Bessman said, are at best only remotely related to the level of blood sugar.

When exogenous insulin is administered, the patient does not get the exact amount he needs at that precise moment since the dose does not correspond to constantly changing blood sugar levels, he pointed out.

“Our sensor and its attachments will correct this imbalance by releasing insulin in direct relation to changes in blood sugar,” Dr. Bessman was quoted as saying in *Modern Medicine* (Sept. 20, 1971).

The sensor is activated by a catalyst capable of producing a chemical reaction which can be translated into an electrical signal proportional to the level of blood sugar.

In addition to the sensor, Dr. Bessman envisions an integrator-computer and a pump with a reservoir sufficient to hold a three-month supply of insulin as the other main components.

The idea is to implant the unit either in the chest or the abdominal cavity. The insulin reservoir would be refilled as needed through a tube just under the skin.

A major problem at this point is miniaturization. All of the elements are in hand, but they are too bulky for implantation. For example, the sensor is now about the size of a cigarette but Dr. Bessman hopes to scale it down to the size of a sewing needle. Eventually, he hopes to develop an integrator-computer no larger than a lima bean and an insulin reservoir the size of a thimble.

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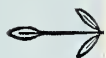
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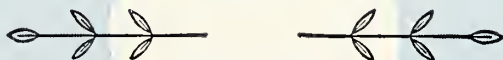
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# Chylangioma of the Mesentery

## *Content and Pathogenesis*

DAVID S. JACOBS, M.D.,\* *and*  
JAMES D. REYNARD, M.D.,† *Kansas City, Kansas*

CHYLANGIOMA of the mesentery, a rare abdominal tumor,<sup>1, 2</sup> is defined as a cavernous or cystic lymphangioma containing a milky fluid resembling chyle<sup>1, 3, 4</sup> which has no special age or sex predilection.

Mesenteric cysts containing a chyle-like content probably have more than a single etiology, and may spring from embryonic sequestration, a traumatic origin, infection, or neoplasia.<sup>4</sup>

It must be recognized that the various published classifications presuppose an etiology for which there is sometimes little verification. The rarity of chylangiomas of the mesentery perpetuates their obscure etiology, although many lesions have been thought to have a developmental etiology.<sup>2, 3, 5, 6</sup> Elliott and associates have recently suggested that these lesions are a consequence of congenital failure of the original lymphatico-venous meshwork.<sup>7</sup>

Lymphangiomas of the mesentery may be single, multiple, unilocular or multilocular, and may show great variation in size, from a few centimeters to growths which fill the abdominal cavity.<sup>4, 5</sup> Belcher lists the following microscopic criteria for differentia-

tion of cystic lymphangiomas from cysts of other types: 1) the lining of the cyst should be endothelial, not cuboidal or columnar, 2) lymphatic spaces should be present within the wall, 3) lymphoid tissue should be present in the wall as diffuse collec-

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**The content of a chylangioma related to the small bowel mesentery has been characterized by lipoprotein electrophoresis in agarose gel, a method not previously used for this purpose. The present knowledge of mesenteric chylangiomas is briefly summarized and a case report is presented.**

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tions of lymphocytes or in configurations resembling the lymph follicles in lymph nodes, 4) foam cells containing varying amounts of lipid should be present.<sup>1</sup> A feature often seen is a predominantly fibrous wall in which bundles of smooth muscle are scattered.<sup>2-4</sup> Lack of smooth muscle in the cyst wall has been considered evidence of an acquired origin.<sup>4, 6</sup> Those lymphangiomas related to the mesentery of the upper small bowel are said to usually contain chyle; thus, the content has been related to the specific location of the lesion.<sup>6, 7</sup>

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† Intern, Department of Pathology and Oncology, University of Kansas School of Medicine, Kansas City, Kansas.

Clinically, patients with mesenteric chylangiomas may present as an incidental finding abdominal mass with or without pain, constipation, nausea and vomiting, diarrhea, weight loss, or other vague complaints related to intestinal or organ compression, obstruction, or displacement.<sup>1, 2, 4, 6, 8-10</sup> These lesions are generally thought to follow a benign course, although Beahrs and associates reported two of nine chylous cysts as malignant, classifying them as lymphangio-endotheliomas.

The treatment for chylous cysts of the mesentery is surgical. The treatment of choice is simple enucleation, provided blood supply to the bowel is not compromised. If this approach is not feasible, resection of the cyst and adjacent bowel is acceptable. If the cyst is so extensive that resection is prohibited, remaining alternatives are marsupialization,<sup>2, 4, 5, 8-10</sup> internal peritoneal cavity marsupialization,<sup>6</sup> anastomosis to adjacent bowel,<sup>2</sup> or aspiration.<sup>2, 4, 9, 10</sup>

### Case Report

A 24-year-old Negro female consulted her physician with the complaint of crampy abdominal pain accompanied by weight loss and indigestion following meals. These symptoms began three months prior to her consultation and were of increasing frequency and severity.

The patient's past medical history was not remarkable, with no history of previous surgery or trauma. She was para II, gravida II without complication. Her family, social, and personal history was not remarkable. The review of systems was negative except for her chief complaint as above.

Physical examination revealed a well developed, thin Negro female in no acute distress. Positive physical findings were limited to the abdomen which revealed an easily movable, rounded, smooth mass in the mid-abdomen approximately six inches in diameter.

Laboratory studies were within normal limits. An upper GI revealed displacement of small bowel by a soft tissue mass approximately 10 centimeters in diameter, which was correctly diagnosed as mesenteric cyst (*Figure 1*).

At operation, a large cystic mass was found in the mesentery of the midportion of the small bowel. The cyst was enucleated intact without difficulty. The patient's postoperative course was uneventful (*Figure 2*).

Examination of the cyst revealed a unilocular structure with slightly trabeculated walls 2-4 millimeters thick. The cyst had a total mass of 349 grams which released 329 grams of a milky fluid. Microscopic examination of the cyst wall showed a flattened layer of endothelial cells covering a fibromuscular wall in which bundles of smooth muscle and lym-



*Figure 1.* Upper gastrointestinal series with barium showing displacement of small bowel.

phatic spaces were moderately prominent. Small aggregates of lymphoreticular cells were scattered inconspicuously along with lipidic macrophages throughout the fibromuscular wall (*Figure 3*).

The pH of the fluid was 7.0 with a specific gravity of 1.029. The fluid was subjected to polarizing and bright field microscopy revealing large brightly anisotropic rounded structures. A direct smear of the cyst fluid revealed no exudate or bacteria. Total pro-



*Figure 2.* Exposure of cyst at laparotomy.



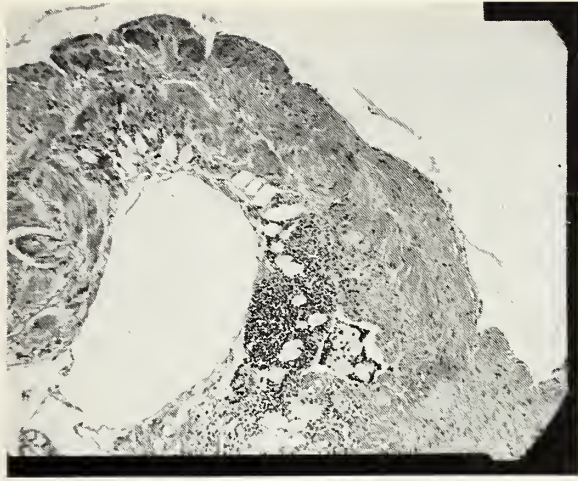


Figure 3. Photomicrograph of cyst wall. Magnification  $\times 100$ . Stained with hematoxylin and eosin.

tein was 4.2 grams per 100 milliliters; cholesterol, 200 milligrams per cent; and triglyceride, 1250 milligrams per cent. Lipoprotein electrophoresis of the cyst fluid was stained by Sudan Black B, and compared to fasting lipoprotein electrophoresis in the same agarose gel slab of the patient's plasma (Figure 4).

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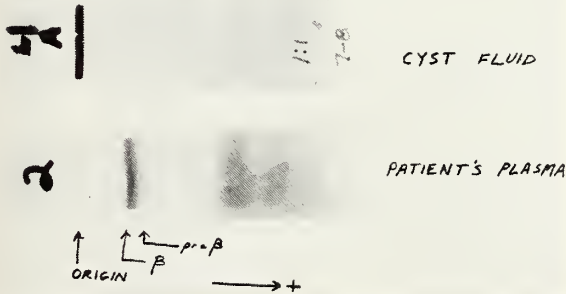


Figure 4. Comparison of cyst fluid with patient's plasma following lipoprotein electrophoresis in agarose gel. The cyst fluid was diluted 1:1, 1:2, 1:5, 1:10 in buffer with no change of electrophoretic pattern.

## Discussion

The contents of chylous cysts of the mesentery (chylangiomas) have been sporadically documented in the literature with variable results. Thompson, reviewing the results of other authors, found the fat and the protein content reported to vary widely.<sup>3</sup> Engel indicated that there has been little attempt to characterize the contents of chylous cysts, emphasizing the need for further study as a method for elucidating their obscure etiology.<sup>8</sup> Blecher analyzed the contents of a mesenteric chylangioma. Com-

menting that the source of the chylous fluid was not obvious, possibilities he suggests include derivation from the return of chyle from the intestine, accumulation predominantly as a transudate, or change in the composition of contained lymph. Blecher reported cholesterol of 400 milligrams per cent with triglycerides of 346 mEq/l (1018 milligrams per cent).<sup>1</sup>

Human chyle chylomicrons are defined as lipoproteins having an alimentary origin and of sufficient size to be visualized in a dark field microscope, for example, greater than 200 microns.<sup>11</sup> Their composition is 90-95 per cent triglyceride with small amounts of cholesterol, cholesterol esters, phospholipids, carbohydrate, and protein. They belong to a class of low density lipoproteins of Svedberg floating units (Sf) greater than 400, which may be of exogenous (dietary) or endogenous (metabolic) origin. Such low-density lipoproteins possess distinctive electrophoretic mobilities which allow good resolution. Noble, using paper and agarose gel, has shown that chylomicrons (exogenous lipoproteins) remain at the origin during electrophoresis, while low-density lipoproteins of endogenous origin migrate in a pre-beta position.<sup>12, 13</sup> As noted in Figure 4, the content of our mesenteric cyst remained at the origin when subjected to electrophoresis. It is also noted that the triglyceride-cholesterol ratio is quite compatible with chylomicrons when the cholesterol is corrected for the patient's fasting serum cholesterol level. To our knowledge, no previous application of contemporary lipoprotein electrophoresis techniques for the characterization of the contents of mesenteric chylangiomas has been published. It is hoped that this paper will encourage the use of such techniques by other investigators for further evaluation of the pathogenesis of chylangiomas. We conclude that our mesenteric chylangioma did contain exogenous lipoprotein consistent with criteria for chyle as set forth by Krizek<sup>14</sup> and Noble.<sup>12, 13</sup> We have not established whether the cyst did indeed have direct lymphatic connections with intestinal lacteals, or if accumulation occurred after the chylomicrons had entered the blood stream. Although such studies were not done with this patient, it would be worth while to study the kinetics of lipoprotein accumulation within a mesenteric chylangioma with isotopically labeled fatty acids or lymphangiography.

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(Continued on page 169)



# Medicine—Norwegian Style

## *Social Insurance in Norway: Commencement and Actual State*

VICTOR LINDEN, M.D.,\* *Bergen, Norway*

FOR THE NORWEGIAN unskilled laborer of 80 or 90 years ago, life was hard. He worked long hours for subsistence wages, and if he ever became incapacitated for work as the result of illness, he and his family suffered want. It was customary for a family to live in a single room, sharing a kitchen with another family. Diet and clothing were both inadequate. According to statistics relating to the years 1880-1883 compiled by the Christiania Sanitary Commission, life expectancy for executives and the highly educated was 53.2 years, for artisans and skilled factory workers 43.7 years, and for seamen, fishermen and poor people 39.3 years.

This was the social backcloth against which was enacted the 30 years of political strife leading to the introduction of the first law governing health insurance, which entered the statute books in 1911, as the National Occupational Injury Scheme for industrial workers of 1893.

Many objections to the whole principle of national health insurance were raised. It was claimed that it would decrease industrial production because it would inhibit the initiative of the workers. Some argued strongly that any scheme which might be introduced would be subject to extensive abuse by malingers and the like. All of the objectors seemed convinced that health insurance was best left to private arrangement.

In 1903, the Secretary General of the Norwegian Medical Association declared that, so long as the principle of a free choice of doctor was maintained, national health insurance was the best arrangement. This seemed to spring naturally from the undoubted interest shown at the time by the doctors in problems of social welfare. Evidence of this interest are the many institutions of a medical or paramedical nature, founded by doctors in the past and still operative today. A hospital for scrofulous children, a convalescent home for unmarried female workers, a tuberculosis hospital, a public bath, and a central park were established directly as a result of the initiative of doctors during the latter part of the last century. All of the above institutions are still operative, though some have changed their nature. The hospital for scrofulous children, for example, is an orthopedic hospital.

Further evidence of doctors' concern for matters of public health is revealed by the fact that some of them set aside one day each week for free consultation with people who otherwise would hardly have had any medical advice.

The law governing health insurance came into force in 1911. Since then social insurance in Norway has gradually developed and extended.

Our social security scheme has some predominant features which need emphasizing before we approach the details of the main concept.

### **Point One**

Under the Act of March 1956, health insurance has been made compulsory for virtually all persons resident in this country. Since 1961, this is also true so far as the schemes for retirement pension, unemployment insurance, rehabilitation aid, disability pension, benefits to surviving spouse, the unmarried mother, and the single stay-at-home daughter are concerned. The insurance is compulsory for all individuals domiciled in this country irrespective of citizenship. A foreigner who for some time is resident in Norway is automatically insured. However, any preformed disease, injury or infirmity from which he may suffer prior to arriving in Norway is not covered by the scheme. Exception from this rule may be granted on request and will usually be given when there is justification, taking into account the entire situation, especially when the person concerned is going to stay permanently in the country.

"Compulsory" means that neither income nor any other personal or social characteristics can allow a person to stay out of the machinery.

### **Point Two**

We have no particular contribution scheme. The machinery is financed by the ordinary tax system. So far as health insurance is concerned, this part of the tax amounts to five per cent of gross earned income.

In regard to the pension schemes, it amounts to four per cent of gross earned income; for employers, however, it amounts to 7.8 per cent.

Failure to pay due tax will by no means influence the legal rights to benefits in cash and kind and, reversely, benefit in cash cannot be withheld to cover due tax.

\* Delivered at the Jayhawk Scandinavian Postgraduate Course in Bergen, Norway, August 5, 1971.

### Point Three

The patient has a completely free choice of doctor. When he sees a doctor, the national insurance will directly pay the doctor's fee. Only for the first consultation in one and the same period of disease will the patient have to pay something out of his own purse, and this amounts to 40 per cent of the total fee so far as the fees for consultation and home visits are concerned. All fees for laboratory examination, EKG, etc., are covered by the national insurance scheme in full.

We all know the outstanding importance of a good patient-doctor relationship. It is decisive in the treatment of sick people. It may happen that a patient finds himself unable to establish the necessary relationship with the first doctor seen. The patient may, therefore, on the very same day and for the same illness, see another doctor. In these cases the insurance scheme will pay the fees to both doctors. I will admit that this is not fully according to the law, but in practice this has been done. We have found empirically that this has not led to any extensive abuse of the scheme. Reversely, we see in this a really free choice of doctor.

### Point Four

All stays in hospital, and in the majority of cases all stays in nursing homes and convalescent homes, are free of charge. I want to emphasize that our social security system commenced many years before the birth of the concept of "socialized medicine." Our schemes date back to 1893, and as I have already stated, the Act of Health Insurance entered the statute books in 1911.

Having these predominant features in mind, we will consider the various benefits in kind and cash. I have already stated that all hospital care is free of charge and the doctors' fees are covered. The scheme concerning health insurance extends beyond this. It bears the costs of dental service, but only when this is of a curative nature. Tooth extraction and the treatment of oral diseases by a doctor or by a dentist are thus incorporated into the scheme. The insurance does not bear the cost of preservative dental treatment. It is a general public statement that the scheme leaves much to be desired in regard to dental service because of this. We have, however, taken the first step to improve the system since our compulsory nine-year elementary school provides free dental care of all kinds to the pupils.

According to the law, the birth of a baby shall not burden the parents economically. Midwife service and necessary service by a doctor is completely free.

The scheme covers about two-thirds of the cost for physiotherapy and speech therapy when such treatment has been prescribed by a doctor.

Since all hospital care is free of charge, the patients will not be charged for any medicine prescribed during a stay in hospital. Outpatients receive, with some limitations, complete refund of all medicine costs. The legal obligations are that the medicine must be of vital importance and its prolonged use indicated. This is exemplified by the total refund of all expenses for tuberculostatics, vitamin B<sub>12</sub> in cases of pernicious anemia, diuretics, anti-asthmatics, cytostatics, etc.

According to the laws, there will be varying refund of the cost of hearing aids, spectacles and, in cases of total alopecia in women, also the cost of wigs. Orthopedic aids are always free of charge. Plastic surgery, and in the majority of cases also cosmetic surgery, is free.

All travel expenses to and from the nearest doctor, specialist, and hospital are covered fully. When a patient must stay away from home for some period because the prescribed treatment is unavailable there, his stay away from home is financed by the scheme.

Norwegian citizens working on Norwegian ships are covered by special rules which insure them free medical treatment of every kind wherever they may be in the world. There are many other benefits in kind both of a minor and a major importance.

The National Insurance Act offers various benefits in cash. All residents of Norway who are in gainful employment are entitled to sick pay when incapacitated for work because of disease, injury, or infirmity. The amount of money received is fixed according to earned annual income. It amounts in the majority of cases to 90 per cent of net earned income. If the person concerned is partially incapacitated for work, he may draw one-half of this allowance. There is a short waiting period; no sick pay is awarded for the first three days of incapacity for work. When a fresh spell of incapacity for work can be linked under the rules with an earlier spell caused by the same disease, there will be no waiting period.

Diseases acquired through carelessness, neglect or ignorance of the person concerned, or under the influence of alcohol, are not excluded from the right to sick pay.

When a blood or bone donor misses work to donate, he will usually be allowed sick pay for the days concerned. An employee may be forced to miss work because of illness in the family. Sick pay is not paid in these circumstances.

A person unfit to carry out the duties of his own occupation may be able to carry out those of some other occupation, as jobs vary greatly in the physical demands which they make. The cash benefit according to the act is not meant to cover such special professional incapacity. It is, however, stated that



these rules should be interpreted reasonably. Each case must be considered on its merits.

According to the act, an illness starts on the day of the first medical examination. This means that no sick pay can be awarded before the day of the first medical examination. Consequently, the employees and employers are obliged to see a doctor even for minor conditions, such as a common cold. Such a visit is necessary to secure their sick benefit. I suggest that this inflicts the doctors with many unnecessary consultations and even home visits. Many of these people are not in need of medical care, but they are seeing their doctor merely to obtain a medical certificate. As far as this one problem is concerned, I think that the Swedish health insurance scheme is better. It runs smoother. In Sweden, the patient may secure his sick pay for a maximum of seven days without seeing a doctor. It is sufficient for him to inform the local health insurance office by telephone.

At present, sick pay allowances are payable for a maximum of 52 weeks. Days spent in hospitals and other medical institutions are included. When these 52 weeks have elapsed, we are not usually faced with the problem of having to refer the patient to poor relief or national assistance. Daily allowances are payable beyond the duration of sick pay according to the Act of Rehabilitation Aid and to the Disability Pension Act. When the maximum of 52 weeks of sick pay have elapsed, the patient may be permanently incapacitated for work because of sickness, injury, or infirmity. In this case, he is entitled to disability pension. In Norway, the evaluation of disability, both so far as social security and judicial practice are concerned, is based on earning capacity. We do not use tables or a medical evaluation which, though widely used in private insurance and abroad, have given rise to numerous practical difficulties. This is exemplified by the following. The loss of a finger does not have the same significance to a young miner as it has for a 60-year-old violinist. A medical evaluation will give them the same compensation, although only one of them is incapacitated for work. In Norway, the miner will have no pension. The violinist will be rewarded full disability pension on the condition that rehabilitative measures fail in bringing him into other appropriate employment.

We will go back to the situation when sick pay lapses. Our patient need not be permanently incapacitated for work. There may be hope of improvement in his earning capacity by prolonged adequate treatment or by rehabilitative measures. In this case, our patient will be awarded rehabilitation aid which comprises both benefit in kind and cash and which is not limited in time. It ceases, however, when he

is entitled to old age pension, which in Norway commences at age 70. The benefit in kind offered by the Act of Rehabilitation Aid consists of rehabilitative measures of all kinds, such as stays in the state rehabilitation institutes, or appropriate education which may extend even to university studies. No means test is applied to any of the allowances which I have described above.

Housewives who are not in gainful work do not qualify for sick pay. They are, however, entitled to disability pension when permanently disabled, and they are also entitled to allowances in kind and cash according to the Act of Rehabilitation Aid, although this entitlement so far as benefit in cash is concerned does not commence until they have been incapacitated for 52 weeks.

One major aim of the national insurance scheme is to ensure the beneficiaries of a reasonable share in the rising financial conditions of our society. At the same time, there must be a reasonable relationship between the amount received from the scheme and the individual's previous earned income. The pension, therefore, is built up on a basic amount which today amounts to 7400 Norwegian Kroner (approximately \$1,100) a year. This is the amount received by the incapacitated housewife and by other people who have not been in gainful work. All those who had earned an income are entitled to a supplementary pension, which is fixed according to previous earned income. So far as the widow is concerned, the supplementary pension is fixed according to the income of the deceased husband.

The various social security schemes are fully accepted by the public and the doctors; there is no strife between the government and the officials on the one side, and the doctors on the other.

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# Medical HISTORY

## *Disease and Destiny*

ROBERT P. HUDSON, M.D.,\* *Kansas City, Kansas*

IT WAS WITH GENUINE pleasure that I accepted the invitation to deliver the annual Hertzler memorial address. One of my research interests is 19th century American medical education, and one cannot work long in that field without encountering the name of Arthur E. Hertzler. In truth, Dr. Hertzler is a historian's delight, because he turned a neat phrase. His words were not merely spare and well-chosen, but pregnant with meaning as well—the stuff of epigrams. Historians lean happily on such writers because they capture large thoughts in small nets. They save us considerable work.

As one example of what I mean, Hertzler once wrote, "It seems to me that teachers now fail to recognize that in order to reason, one must have facts. Facts are not congenital; one must gather them."<sup>1</sup> Sound words in his day certainly, and even more so with today's trend toward increasingly permissive medical curricula.

Or take this, apropos of medicine's dismal professional image at the turn of the 20th century: "It was generally believed by the laity in our community that all the lawyers and two-thirds of the doctors went to hell. The third saved were homeopaths with beards."<sup>2</sup>

One could go on at delightful length quoting Hertzlerian *bons mots*, but these must suffice for now. Perhaps some future speaker will concentrate on the amazing man to whom this lecture is dedicated.

My topic is disease and destiny. Some among you may find it condescending that I should devote 40 minutes to the theme that disease has helped shape human destiny. But the sad fact is that most tradi-

tional historians, *i.e.*, economic and political historians, continue to ignore disease in the history of man.

It is a curious situation spawned in part, I suppose, by the inbreeding of professional historians. The Ph.D. candidate has it hammered into him that events are shaped by politics and economics. After three or four years of such indoctrination, he becomes a young teacher himself, understandably oriented to traditional political history. And no one would argue but that political events do shape our destiny. The important point, the consistently neglected point, is that political events themselves can be determined by disease—at least in part—and this holds for individual illness as well as mass or epidemic disease.

David Stewart put the matter nicely in 1935, saying: "If strife between man and the elements, or between man and man, make history, what about the strife between man and disease? If history is a record of man's gradual adjustment to environment, his gradual conquest of nature, his innumerable mistakes and slow correction of mistakes, and of his general pursuit of life, liberty and happiness, what about his age-long environment of epidemic and endemic disease, and his gradual conquest of disease? If these are not makers of man's history, what are they?"<sup>3</sup>

Despite a sad litany of pleas by medical historians now spanning at least 140 years, the message has gone generally unheeded. Pick up any general historical text and the odds are that you will find *no* indexed mention of disease<sup>4</sup>—not a single reference to the cholera that plagued the American frontier, or to typhus and typhoid, which with other infectious diseases took more lives than did battle in perhaps every major war in history prior to World War II.

Medical historians apparently share this problem with historians of science. Kuhn, in a recent issue

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of *Daedalus*, points out that although historians of science have for many years infiltrated history faculties, they have not succeeded in convincing their traditional colleagues that science has been a major force in directing history since the 17th century.<sup>5</sup>

The subject of disease and destiny is susceptible to a double-barreled approach—destiny as shaped by individual illness, and history as it has been molded by mass or epidemic disease.

Examples of individual disease and destiny are easy to come by. Woodrow Wilson suffered a series of strokes in 1919, and for practical purposes the governance of the United States for some 18 months lay in the hands of his friend Joseph Tumulty, his physician Dr. Grayson, and above all, his wife.

Roosevelt went to Yalta so weakened by arteriosclerotic heart disease and hypertension that he could muster only four hours of work daily. In this condition he made the agreements with Churchill and Stalin that some observers later labeled a near sellout to Russia.<sup>6</sup>

John Kennedy's adrenal insufficiency was at least partially obscured by the Clan, presumably because it might have jeopardized his election chances.<sup>7</sup>

The list of rulers suffering mental disease of one sort or another, as compiled by Dumas in *Madness in Power*, is incredible and offers no comfort to those of us who must live in a world of nuclear weapons.<sup>8</sup>

Not every example of individual disease and destiny is all that dramatic. The little physical afflictions take a toll as well. Mystery has always surrounded General Longstreet's delayed cavalry charge at Gettysburg. At least one amateur Civil War buff now suggests that General Longstreet's problem was not indecision or lack of courage, but a lowly thrombosed hemorrhoid. Those of you who have never experienced this mundane medical condition may wonder that a hemorrhoid could actually delay a crucial cavalry charge, but physicians will readily agree to the basic incompatibility between a wildly bouncing saddle and a flaming-blue thrombosed hemorrhoid.

While in this general anatomical region, one might mention the case of the French Dauphin and his phimosis.<sup>9</sup> The Dauphin, later the ill-fated Louis XVI, married Marie-Antoinette in 1770 when he was 15 and she 14 years of age. It all began like Romeo and Juliet. But rather than an ancient vendetta between Capulets and Montagues, our star-crossed lovers had to deal with the Dauphin's phimosis. Under ordinary circumstances phimosis does no serious harm. For an unfortunate few, however, it can make erection excruciatingly painful. And so it did with the Dauphin. Though phimosis can be corrected by relatively minor surgery, in this case no surgeon could be induced to offer his services. Perhaps they feared the possibility of infecting what has been re-

ferred to in Rabelaisian terms as the *rod royale*. In the event of some catastrophic complication (the surgeons might have speculated), what if the Royal Family resorted to the talionic law of the Old Testament and demanded an eye for an eye? Clearly, prudence was in order.

Finally in May 1777, seven years after the marriage, the operation was performed and in August, Marie wrote it had been entirely successful. Their first child was born the next year, with three others in due course. But the seven-year delay had done irreparable harm to the political situation. The populace had become intensely annoyed with the King for not producing an heir, and angry with Marie—that "Austrian" they called her—for wasting so much money on lavish court entertainment. Had she been kept pregnant, the argument goes, she might have been satisfied with less expensive types of amusement.

*The Encyclopaedia Britannica*, in a classic example of history ignoring illness, blames the king for Marie Antoinette's pursuit of fun and games with the more dissolute members of the Court, saying, "The King, though affectionate, was cold and apathetic, and it was not until seven years after her marriage that there was any possibility of her bearing him an heir."<sup>10</sup> Cold and apathetic? A severe paraphimosis would have rendered Casanova a model of celibacy.

There is genuine historical meaning behind these mildly ridiculous examples. Even benign physical ailments can disrupt our thinking processes thereby influencing our decisions. There are no philosophers with toothache. Who knows how many treaties have been shaped in part by migraine? Or how many battles decided by the pain of peptic ulcer? The answer is that no one can know, because our medical diaries have not been sufficiently detailed. The situation is improving as physicians to prominent men become more aware of the historical importance of a day-by-day clinical report. Lord Moran's account of Churchill is a good example, as are the recently revealed details on the illnesses of Franklin Roosevelt. But the picture for most of history remains inescapably blurred.

For a more detailed example of individual disease and destiny we might consider the case of Friedrich Nietzsche, the great 19th century German philosopher-writer.<sup>11</sup> Nietzsche was born of a long line of Protestant ministers. As a child he was noted for his gentleness, politeness and kindness, characteristics that become important in light of his later life. He detested all cruelty and vulgarity, but loved poetry and was composing music at age ten.

At the University of Bonn, Nietzsche began the study of theology and classical philology. During one phase he attempted the role of the gay young college blade of the time, fighting a duel and sam-



pling a variety of vintage wines and women. All this soon disgusted his aesthetic sense and he returned to his books.

About this time he read Schopenhauer and, to the distress of his family, he changed his religious views. Finally he dropped theology altogether and concentrated on philology. At the age of 24, before he received his degree, he accepted a professorship at the University of Basel.

The following year Nietzsche published his first book, *The Birth of Tragedy out of the Spirit of Music*. In this he linked the "music of the future," as Wagner's music was known at the time, with the tragedies of Aeschylus. The book was a sensation. Nietzsche followed with other books at a feverish pace, and soon his name was, in today's parlance, a household term.

For our purposes it must be emphasized that *Birth of Tragedy* was a gentle, reasoned, scholarly book. Ten years later Nietzsche produced *Thus Spake Zarathustra*, a book that was violent, disconnected, in places all but irrational. Yet Nietzsche proclaimed, "With my Zarathustra I have made humanity the greatest gift she has yet received."<sup>12</sup>

In this "greatest gift" Nietzsche propounded his doctrine of Superman, "the man who has not only the right but the mission to ruthlessly trample under foot the weak, the degenerate, the poor in spirit."<sup>13</sup> With the full invective power of an expert philologist he attacked the Christian church, and the ideals of democracy, calling on the world to overthrow these two examples of *Sklavenmoral*, the morality of slaves.

The book increased Nietzsche's popularity with some, but it cost him followers as well. The chapter on the *Eselsfest*, which has the Pope worshipping a jackass, could scarcely be expected to endear him to Roman Catholics. Nor would he win the proletariat with such statements as "shopkeepers, Christians, cows, women, Englishmen and other democrats all belong together."<sup>14</sup>

His next book, *Götzendämmerung* (1889), was even more violent and prompted the great Viennese surgeon, Theodor Billroth, to comment, "This book seems to be the product of a madman,"<sup>15</sup> prophetic words to which we will return momentarily.

Following World War I, Germany was crushed militarily and economically. More important for our story, she was crushed in spirit. On this scene came Adolf Hitler. With a brilliant stroke of psychological insight, Hitler decided to revive the German spirit by feeding it Nietzsche, in particular Nietzsche's concept of Superman. Germany would become a race of supermen. The extinction of Jews followed as a matter of course. They were, as everyone knew, weak and spiritually corrupt. The rest of this

story is sadly familiar to all and need not be recounted here.

Let us return to Nietzsche for a moment. What happened to that gentle spirit in the ten years between his first book and *Zarathustra*? Was this nothing more than the natural evolution of a genius' mind? In all likelihood it was an evolution, and natural too, insofar as disease may be termed natural, because soon after the statement by Billroth, Nietzsche was in fact admitted to a hospital for the insane in Basel. There it was found that his pupils were unequal and reacted poorly to light. His reflexes were exaggerated and he suffered profound mental confusion. He survived 12 years as a helpless mental invalid and died in 1900.

The most probable diagnosis on Friedrich Nietzsche was paresis, or syphilis of the brain. His earlier fling at the gay life, brief though it was, apparently was long enough. If this diagnosis is correct, Nietzsche's change is easily understood. His transition from a gentle, retiring man into one of extreme mental activity and unbounded egotism is classical for syphilis as it attacks the intellectual centers of the frontal lobes of the brain.

Ideas often do not share the mortality of the minds which spawn them. Ideas can live on retaining their capacity for good and evil for centuries and even millennia. With Nietzsche, a diseased mind brought forth an idea which in the later hands of Adolf Hitler, himself not exactly a paradigm of mental health, changed the lives of most of the people on earth. Certainly, it scarcely needs saying that Nietzsche's ideas helped determine the awful destiny of the millions of Jews exterminated by Nazi Germany.

We turn now to mass disease and destiny. Again, there is no shortage of possible examples, and on the grandest of scales. For example, one theory has it that the centers of civilization moved inexorably away from their equatorial cradle mainly because of a single disease, malaria, then and now probably the greatest killer of all among the world's infectious diseases. How else to explain civilization's abandonment of its birthplace, the equatorial band some 6000 miles wide that covers almost one-half of the world's land mass and some of the best watered, most fertile land on the globe? Malaria is not only a killer, it is a crippler. It leaves its victims chronically ill, "dulled, depressed, their lives sapped and shortened," a pathetic death-in-life Ronald Ross described in his eloquent couplet:

The hopeless millions die  
That yet have never lived.<sup>16</sup>

California provides an example of how disease can affect exploration and settlement.<sup>17</sup> Consider why so



many of California's major cities are not situated on good natural harbors. The contrast with the East Coast is striking—Boston, New York, Philadelphia, Charleston. To a considerable extent, disease decided the early distribution of California's settlements. In this case the disease was the scourge of the seafaring man, scurvy. Between 1740 and 1744, Lord Anson surveyed America's Pacific Coast by ship. Of 3000 men who left England, barely 200 survived scurvy. It was this trip that inspired James Lind to make his famous study (an early example of controlled clinical experimentation) that finally led the admiralty to include citrus fruits on all long voyages. The simple fact was that scurvy made the sea voyage to California too long to be feasible. The Spaniards decided instead on a land route, and it was this string of missions that became the nucleus of population growth and the large cities of today's California.

What of war and disease? Generals and those who write about generals tend to emphasize this crack regiment or that brilliant maneuver, playing down the role of disease in deciding battles. But is this the case? One campaign can serve to answer.<sup>18</sup> On June 1812, Napoleon Bonaparte, perhaps the most gifted and efficient mass military killer in history, plunged into Russia with an army of some 400,000 men. A short few months later he straggled back to France leading 3000 troops!

The popular notion is that Napoleon was defeated by the bitter Russian winter, and he himself attributed the shattering debacle to "General January."<sup>19</sup> In a sense, he was right. The cold killed Napoleon's men all right, but indirectly moreso than directly. Many died because the frigid weather prevented them from bathing and keeping their clothes clean. This led to infestation with the body louse and ultimately typhus fever.

Typhus has always been the soldier's enemy, in fact the enemy of men any time they are crowded together in unhygienic conditions. Its many nicknames confirm this fact. At different times and in various places it has been called jail fever, ship fever, prison fever, and even hospital fever.

It requires little imagination to picture the devastation wreaked by a typhus epidemic under conditions that prevailed during Napoleon's deadly march out of Russia. Baths were impossible and washing clothes out of the question. The lice multiplied and as they did, the men died. Ralph Major summed it up in this way: "Typhus fever was a greater enemy of Napoleon than winter, wolves, or Cossacks."<sup>20</sup>

All of this is hard on the pride, and generals usually do not lack for pride. It is painful for them to concede that a tiny germ, not a great strategy, decided a given battle. Napoleon, in conversation with

Goethe, denied even the role of destiny itself. "What have we to do with destiny now!" he said. "Politics are destiny."<sup>21</sup>

Politics may be destiny, as Bonaparte claimed, but so is the lowly body louse.

Perhaps no period in history was more shaped by disease than the Middle Ages. Epidemics of leprosy, syphilis, and bubonic plague swept western Europe in wave after terrible wave.

By all measures, the epidemic disease that most altered the medieval way of life was the Black Death of pneumonic and bubonic plague. We will never know the exact mortality, but Hecker, who is conservative on his point, set the figure at one-fourth of Europe's population, or some 25 million persons. And what does the popular history text by Palmer and Colton tell college students of the Black Death? Not a word. There are indexed references to the Black and Tans, the Black Hole of Calcutta, The Black Hundreds, the Black Sea and the Blackshirts, but no mention of the Black Death.<sup>22</sup>

A number of chilling first-hand accounts exist describing the pervasive panic produced by the plague. The rich soon learned to flee the deadly cities. With them, of course, went the rulers, nobles, magistrates, lawyers, businessmen and physicians. Guy de Chauliac, the famed French surgeon, was among the few distinguished medical men who stayed to care for the afflicted, and even he confessed, "As for me, to avoid infamy, I did not dare to absent myself, but still I was in continual fear."<sup>23</sup>

Boccaccio, after witnessing the plague in Florence, wrote, "One citizen avoided another, hardly any neighbour troubled about others, relatives never or hardly ever visited each other. Moreover, such terror was struck into the hearts of men and women by this calamity, that brother abandoned brother, and the uncle his nephew, and the sister her brother, and very often the wife her husband. What is even worse and nearly incredible is that fathers and mothers refused to see and tend their children, as if they had not been theirs."<sup>24</sup>

With the city's leadership gone, anarchy set in. All manner of crimes became commonplace. Houses suspected of harboring plague patients were simply boarded up from outside. Few men were willing to carry off the dead, with the result that they were burned in heaps or simply allowed to accumulate in the streets.

Gasquet names the plague as marking "the real close of the medieval period and the beginning of the modern age."<sup>25</sup> This may be a bit too strong, because the effects of the plague cannot be sorted out quantitatively from the other disasters of the time—the famines, wars, floods, the epidemics of leprosy, syphilis, typhus, and the mysterious sweating sick-

ness. Still there is little question but that the Black Death played a significant role in reshaping human destiny at the time. Consider briefly the plague's overpowering effects on just three social institutions: religion, feudalism, and arts and letters.

The Roman Catholic Church never recovered its previous pervasive power and influence after the epidemics of bubonic plague. This terrible disease wounded the church in at least two ways. First, the faith of the masses in the wisdom and justice of God was bound to diminish as the plague struck down bishops and babes as readily as convicts and whores. This blow to higher church ranks forced Rome to fill high positions with poorly trained and inferior men. While one cannot say the Protestant Reformation would not have come without the plague, it is equally untenable to argue that the Black Death did nothing to make Luther's job easier.

The plague helped crack feudalism as well. In essence, the thousands of deaths created a new labor market. Lowly farm workers, previously bound to the land by ignorance and the feudal establishment, now found their labor in a seller's market, both on the land and in the towns as apprentices to artisans. Lordly families were wiped out to the last heir leaving vast acreages to be redistributed. The decimated population, from sheer paucity of people, found opportunities open that would never have appeared under previous conditions.

What of the arts and letters? Huizinga, in his fine book, *The Waning of the Middle Ages*, wrote that, "No other epoch has laid so much stress as the expiring Middle Ages on the thought of death."<sup>26</sup> Strangely, he does not connect this psychological phenomenon to the profound sense of earthly mortality occasioned by the recurrent sweeps of deathly devastation that characterized the Black Death. He gives no mention of disease in relating just how tenuous life came to be held at the time. It is another striking example of a competent historian ignoring disease.

Indeed, it would have been surprising if medieval man had not had a compulsive fixation on death. Death was ever at hand, invisible, capricious, and ominously insistent. "How many gallant men and fair ladies and handsome youths," wrote Boccaccio, "whom Galen, Hippocrates and Aesculapuis themselves would have said were in perfect health, at noon dined with their relatives and friends, and at night supped with their ancestors in the next world!"<sup>27</sup>

The death motif pervaded late medieval arts and letters. The Dance of Death became a favorite theme. The emphasis was on death's horrible inevitability as well as its fearful lack of discrimination. Rich man and poor, devout and atheistic, royalty

and beggar—each slipped away when death placed its bony hand on the shoulder.

The factors determining thematic trends in painting and literature for any given period are tremendously complex. Obviously, disease alone did not account for life's tenuousness in the Middle Ages. Nor did the shaky nature of existence by itself lead medieval man to dwell on death in the arts. But epidemics must have played a significant role in the matter. Leprosy, the terrible maimer, when it did not kill, produced a form of death-in-life. Syphilis, Satan's kiss, made a fatal epidemic mockery of man's highest expression of physical love. And *la peste*, the most fearful of all, spared few who came in contact with it, producing widespread panic and near total dissolution of the entire social fabric.

One could go on to no particular end. Potential examples are all but endless. Excepting a few, all men suffer disease sooner or later. For many, illness is bound to disrupt thinking processes or other vital functions, and thus the course of history. On the larger scale, epidemic diseases have shifted political boundaries, helped determine the psychological factors of a given *Zeitgeist*, cracked the integrity of the structure of governance.

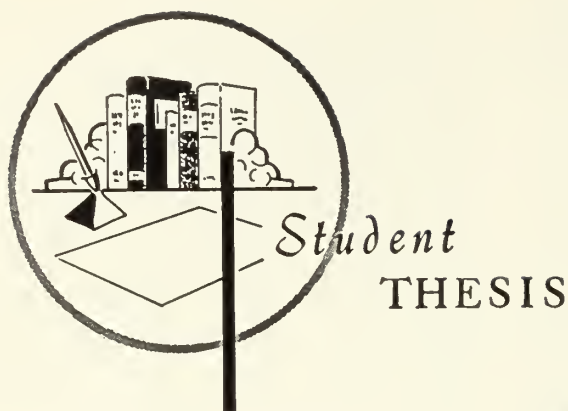
An even larger question remains untouched. True, disease affects destiny, but is the effect always, or even usually, detrimental? To turn things around, can individual diseases and even epidemics have a salutary effect on man and his kind? Hecker posed the possibility over a century ago, when he wrote that the revolutions produced by the desolation of great pestilences "are performed in vast cycles, which the spirit of man, limited, as it is, to a narrow circle of perception, is unable to explore. They are, however, greater terrestrial events than any of those which proceed from the discord, the distress, or the passions of nations. By annihilations they awaken new life; and when the tumult above and below the earth is past, nature is renovated, and the mind awakens from torpor and depression to the consciousness of an intellectual existence."<sup>28</sup>

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## *Multiple Endocrine Adenomatosis*

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MULTIPLE ENDOCRINE ADENOMATOSIS (MEA) is associated with a rare syndrome characterized by hypertrophy or tumor of various endocrine glands with elaborate polypeptide substances. The tumors of this genetically associated syndrome are embryologically related in that all arise from the primitive foregut. The first mention of this syndrome was by Lloyd in 1929. He described tumors of the parathyroid gland, the islands of Langerhans, as well as the pituitary.<sup>10</sup> These findings were made at autopsy. Not until the late 1940s did clinical interest arise in this unusual syndrome.<sup>13</sup>

Generally, two or three glands are involved in multiple endocrine adenomatosis in a single patient. Due to the pluriglandular involvement, many varied clinical pictures can result. Usually, the signs and symptoms are associated with hyperfunction of the involved organs. Johnson and associates noted in reviewing the literature on MEA, that a predominant combination exists between adenomas of the parathyroid gland and the non-Beta cells of the islets of Langerhans in the pancreas.<sup>9</sup> Adenomas of the thyroid, adrenal gland, Beta cells of the pancreas, bronchi, and pituitary gland have also been described. These are much more uncommon than the non-Beta cell-parathyroid complex.<sup>4, 5, 11</sup>

In the past, many excellent articles have been written describing members of families with this syndrome. Johnson<sup>9</sup> described a family of 27 members which included 12 members with parathyroid

gland, islet-cell, pituitary gland, and thyroid gland adenomas. Ballard<sup>1</sup> described a long-term study of 42 family members in which 11 members were clearly diseased with parathyroid and pancreatic adenomas. Wermer<sup>16</sup> found five of nine members involved in his study, of which four members had

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**This article was designed to study one family with multiple endocrine adenomatosis in a prospective manner. All siblings of the proband were admitted for clinical investigation at the University of Kansas Medical Center. Through historical, physical, laboratory, and roentgenologic examination it was found that four of nine members of the family had evidence of MEA. The article tends to confirm earlier work on MEA in regard to the genetics of this syndrome. As this is a prospective study, it is felt that time will reveal other members, perhaps too young at the present time, with MEA.**

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sellar defects. Friesen<sup>7, 8</sup> has proposed a genetic basis with a complicated feedback mechanism in the pathogenesis of the Zollinger-Ellison Syndrome. He has studied two families with a high incidence of foregut peptide-secreting tumors. In this article, we present a prospective study on a family of nine who may have MEA. The proband is discussed first (Table 1).

### **Case Report**

C.P., Sr. This 43-year-old man had a history of renal stones from 1953. He had symptoms and x-ray confirmation of a duodenal ulcer since 1959. In Sep-

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\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Pees is now serving his internship at the Maricopa County General Hospital, Phoenix, Arizona.



tember 1960 he was told that he was diabetic and had hypertension. In December 1960, because of findings indicative of hyperparathyroidism, his surgeon excised a left parathyroid gland which was histologically hyperplastic, and a thyroid nodule, histologically normal. He continued to complain of lethargy, weakness, nocturia, and polyuria. In November 1962 he was referred to the University of Kansas Medical Center with the primary complaint of increasing epigastric pain and bloating, relieved by milk and antacids. The family history indicated that the mother had a "stomach ulcer." Physical examination revealed a lethargic patient with no abnormalities except blood pressure of 150/105, mild epigastric tenderness, and a healed cervical scar. The laboratory data showed evidence of hyperparathyroidism. Upper gastrointestinal x-rays demonstrated a duodenal ulcer with deformity. A diagnosis of polyglandular syndrome was made and, on December 6, 1962 an exploration of the neck with left thyroid lobectomy failed to uncover the suspected adenoma of the parathyroid. Twelve days later, the neck and mediastinum were re-explored with the excision of a parathyroid adenoma. Following this, the serum calcium and phosphorus gradually returned to normal. Postoperative psychosis and one episode of upper gastrointestinal hemorrhage reduced the hemoglobin to 8 gm/100 ml. After a prolonged hospital course, he was dismissed and prescribed a medical regimen including Vitamin D, calcium lactate, antacids, and a low salt diet. In August 1967 a routine chest x-ray revealed a circular mass in the right lung field approximately 4 centimeters in diameter, and a smaller one on the left, posterior to the heart. He was readmitted to the hospital for evaluation. X-ray examinations demonstrated bilateral pulmonary metastases, a normal sella turcica, normal long bones, nephrocalcinosis and renal stones, gastric hyperperistalsis, flocculation of the small intestine, a large postbulbar duodenal ulcer with nodularity of the duodenum. A hepatic scan was consistent with multiple liver metastases. A diagnosis of polyglandular Zollinger-Ellison Syndrome with hepatic and pulmonary metastases was made. The patient was given several transfusions of whole blood and on September 22, 1967 operation revealed a 4 centimeter mass in the body and head of the pancreas, multiple small liver metastases, a thickened stomach, and a large ulcer of the second portion of the duodenum. A frozen section microscopic examination of one liver metastasis was consistent with islet cell carcinoma. The tail of the pancreas, which contained the large mass, and the spleen were removed, and a total gastrectomy with esophagojejunostomy en Roux Y and appendectomy were done. Multiple nodules in the remaining pancreas and the liver were left in the patient. There were no metastases to lymph nodes, but

there were malignant cells at the line of pancreatic excision, hepatic metastases, chronic peptic ulcer of the duodenum, gastric mucosal hyperplasia with ectopic pancreatic tissue in the wall of the stomach. Tissue assay for gastrin was positive. Assay of the tumor for insulin was positive.

The postoperative course was uncomplicated and follow-up of the patient continued in the surgical clinic. A chest x-ray 46 days after operation demonstrated remarkable reduction in the size of the pulmonary metastases. At 66 days the lesions are described as "very small," and at 82 days they were not discernible. Planigraphic studies showed two opacities in the right and one of the left, each less than one centimeter in diameter. Hepatic scans at 67 days and 82 days were reported as normal, without evidence of metastatic disease. In the summer of 1968 the patient, with close follow-up, showed by x-ray an enlarging mass in the right lung field. In September 1968 a wedge resection of the small recurrence of the middle lobe of the right lung was done. Histologic examination of this mass revealed metastatic pancreatic carcinoma. Since this time the patient has been followed in the surgical clinic. No evidence of recurrence has been revealed to date and the serum gastrin levels have come down to normal values.<sup>7</sup>

## Methods

All members of the proband's family were admitted to the University of Kansas Medical Center for brief clinical investigation. These persons were hospitalized for two to three days on the Clinical Research Unit of the hospital. All patients underwent complete historical and physical examination. Determinations of the following laboratory studies were made: urine analysis, complete blood count, electrolytes,\* alkaline phosphatase, urea nitrogen, creatinine. Other screening tests for endocrine abnormality were performed. They included: protein bound iodine, tubular reabsorption of phosphate,<sup>†</sup> follicle stimulating hormone, 5-hydroxyindoleacetic acid, cortisol, two-hour postprandial blood glucose, serum gastrin. In addition to these tests, routine roentgenologic examination included chest film, sella turcica and skull x-rays, hands and abdominal x-rays. Historical and physical evidence guided further studies, such as upper gastrointestinal series and intravenous pyelograms. One member of the family—the proband's mother—expired prior to examination. Only historical evidence could be gained regarding the health of this woman. No autopsy was performed. Surgical findings and tissue studies are also included on three members of the family.

\* Calcium and phosphorus were generally repeated once owing to the character of the disease in question.

<sup>†</sup> This test was performed without phosphate load.

TABLE I

Pt.	Age & Sex	Acid Secretion		Hist. D.U.	Findings	Operations	Gastrin Assays Ser. Tis.	Associated Findings	Result
		12-Hour Volume	mEq./L.	mEq./12-hr.	BAC	MAC	Year		
C.P.	43 M			3	1953 Renal stones 1959 Duodenal ulcer				
					1960 Duodenal ulcer Hyperparathyroidism Parathyroid hyperplasia Thyroid nodule, normal	Excision left parathyroid gland; excision thyroid nodule		"Diabetes" "Hypertension" Calcium 6.5 mEq./l. Phosph. 2.35 mgm. % PBI 2.4 mcg. % 2-hr. p.p. blood sugar 150 mgm. % Normal sella & chest Nephrocalcinosis Blood type A pos.	
					1962 Duodenal ulcer Continued hyperparathyroidism	Left thyroidectomy		Calcium 7.4 mEq./l. Phosph. 1.0 mEq./l. TRP 80%	
		1300	84	109	0.7	1962 Continuing hyperparathyroidism	Excision rt. parathyroid adenoma, sternal split	Normal sella, chest, hands BP 150/105; hgb. 13.5 gm. % 17-K.S. 19.7 mgm. 24 hrs. 17-K.G.S. 30.3 mgm./24 hrs. Decreased glucose tolerance with reactive curve Elevated growth hormone suppressed by glucose PBI 3.1 mcg. % 5-OH, I.A.A. negative	
C.P.	1350	92	124	0.9	1967 No hyperparathyroidism Duodenal ulcer 2nd portion; duodenal nodularity; multiple islet cell carcinomata of pancreas with metastases to liver and lungs	Total gastrectomy Excision of tumor in tail of pancreas Excision of hepatic metastasis	0	+ Pulmonary metastases, bilateral; hepatic scan, multiple metastases; normal sella Calcium 4.3 mEq. l. Phosph. 2.7 mEq./l. BP 130/70; hgb. 5.1 gm. % 17-K.S. 12.8 suppressed to 5.2 mgm./24 hrs. 17-K.G.S. 13.8 suppressed to 4.1 mgm./24 hrs.	

1968	Regression of pulmonary and hepatic metastases	0	Normal glucose tolerance; 5-OH, I.A.A. negative; PBI 4.4 Insulin assay positive.	Normal chest x-rays at 82 days; residuum on planigram, 82-192 d. Normal hepatic scan at 67 days; marked decreased glucose tolerance; elevated growth hormone without suppression by glucose Positive insulin assay Recurring pulmonary metastases	Well without evidence of re- currence.
1968 1968 1971	(Sum.) (Sept.)	Resection rt. middle lobe	Normal liver scan Marked improvement in glucose tolerance Normal growth hormone; high insulin		

C.P., Jr. is a 27-year-old son of the proband. Upon this patient's evaluation he was found to be asymptomatic. The physical examination was considered to be normal. Laboratory examination revealed chemical evidence of hyperparathyroidism (*Table 2*). A parathyroidectomy for adenoma has corrected his hyperparathyroidism.

N.M. is a 25-year-old daughter of the proband. She was evaluated at the University of Kansas Medical Center, as were her brothers and sisters. The patient was asymptomatic. Physical examination revealed a normotensive female who appeared normal for her age. There was a mass in the right side of her neck at the level of the thyroid. This was firm and smooth, approximately one centimeter in diameter. Laboratory studies are summarized in *Table 2*. An intravenous pyelogram revealed nephrocalcinosis without stone formation. Other x-ray studies were normal. Since laboratory and x-ray studies pointed to the diagnosis of hyperparathyroidism, a parathyroid scan and arteriography were attempted. These tests were not diagnostic. Approximately one week following admission the patient underwent neck exploration. Two one-centimeter adenomas were removed in the area of the inferior parathyroid glands. These were histologically proven to be parathyroid adenomas. The postoperative course was uneventful and the patient's serum calcium and phosphorus returned to normal values. Presently she is being followed in the surgical out-patient clinic. To date her calcium and phosphorus values remain normal.

CL.P. is a 22-year-old brother of the above two patients. The history on this patient was unrevealing except for the fact that he had passed a stone in his urine approximately one year prior to admission. Physical examination was normal. As did his siblings, this patient showed chemical evidence of hyperparathyroidism (*Table 2*). Radiologic studies revealed a defect in the inferior floor of the sella turcica. Since he seemed to have no evidence of symptomatology related to this possible mass in the pituitary gland, nor chemical evidence of endocrine abnormality other than possible hyperparathyroidism, he was dismissed to return in six months for follow-up. He has since had a parathyroidectomy for parathyroid hyperplasia and adenoma which has corrected his hyperparathyroidism. The abnormal pituitary findings are being followed closely.

## Results

To date, four members of the family presently demonstrate the pattern usually seen in multiple endocrine adenomatosis. The proband has histologic proof of both, a parathyroid adenoma as well as a non-Beta islet cell adenocarcinoma. Both of these tumors were active in producing the clinical signs of hyperparathyroidism and the Zollinger-Ellison Syn-



TABLE II

Name	Age	Data Related to Hyperparathyroidism			Other Data
		Ca	P	TRP	
C. P., Jr.	27	5.4	1.6	52%	X-rays normal. Three lipomas noted on arm and thorax.
N. M.	25	6.0	1.6		PBI, 17 ketosteroids. Gastric analysis was normal.
		6.2	1.3		X-rays: ugi, sella turcica, hands normal. IVP revealed nephrocalcinosis.
D. P.	23	5.2	2.3		Other endocrine tests were normal. X-rays were normal.
Cl. P.	22	5.8	1.5		Other studies were normal. X-rays showed a sellar defect.
D. P.	19	4.7	2.1		Other studies were normal. X-rays were normal.
S. P.	16	4.9	2.5		Other studies were normal. X-rays were normal.
		4.8	2.7		
J. P.	12	5.0	2.4		Other studies were normal. X-rays were normal.
		4.8	2.7		
Ji. P.	4	5.4			Patient in lower 5% on growth chart for age. Otherwise normal.
Proband's mother	Before this woman could be examined she expired in another hospital. No evidence of hypercalcemia or gastrointestinal disease was found. The patient apparently expired from a myocardial infarction.				

drome. The eldest daughter upon admission was shown to have a parathyroid adenoma, which was subsequently removed. During the same hospitalization, further endocrine studies were within normal limits. The oldest son of the proband showed early signs of possible hyperparathyroidism, manifest by consistently elevated serum calcium and depressed phosphorus. An excision of a parathyroid adenoma

has corrected his hyperparathyroidism. A younger son of the proband similarly had early signs of hyperparathyroidism for which a parathyroidectomy was done. Unlike his brother or sister, this son has roentgenologic evidence of a space-occupying mass in the area of the pituitary gland. This may represent a small adenoma of that gland. The remaining members of the family seem to be normal at this time (*Figure 1*).

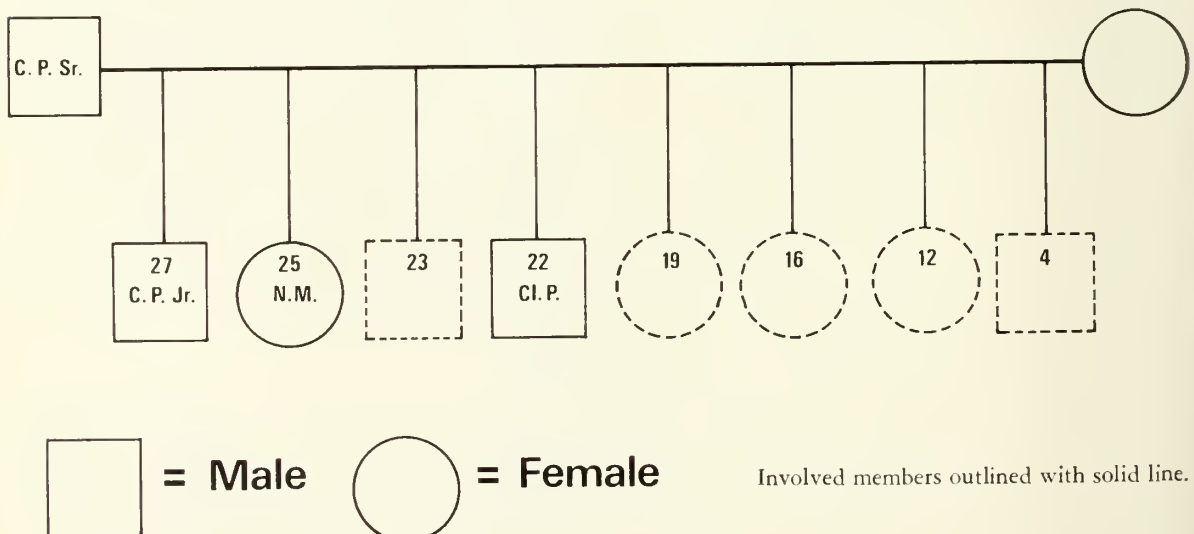


Figure 1. Family Pedigree.

## Discussion

The family reported in this study seems to have early signs of multiple endocrine adenomatosis. Compared to other studies, this family is quite young and yet, three siblings of the proband show unmistakable evidence of the syndrome. At this time, the apparent trend in this family is toward hyperparathyroidism. One sibling, however, has evidence of pituitary enlargement. This probably represents one more manifestation of this multifaceted syndrome.

Wermer, in 1954,<sup>16</sup> concluded that multiple endocrine adenomatosis had a genetic origin. He further demonstrated that the trait was probably autosomal dominant in character. Johnson,<sup>9</sup> in a much larger series, confirmed the hypothesis that the syndrome was inherited as an autosomal dominant defect by pointing to the high frequency rate seen in one family. This association, plus the demonstration of no sexual predominance, tends to confirm Wermer's hypothesis. In the present study we, too, find a high degree of involvement in one form or another. Of eight offspring, the proband has three children who are involved. Thus, although a relatively small family, this study lends support to the hypothesis that this syndrome is genetically autosomal dominant.

Compared to other similar families,<sup>9, 10, 16</sup> the family discussed here is quite young. This fact alone, as pointed out by Johnson,<sup>9</sup> tends to dampen the prospect of finding many members with clear evidence of hyperparathyroidism at this time. Evidence of hyperparathyroidism usually arises in the third decade. Since a majority are below that age, only time will reveal the numbers of members involved.

The total lack of symptoms or signs referable to acid peptic disease in this group of patients, other than in the proband, is quite interesting. In other studies the presence of multi-endocrine manifestations seemed to be closely aligned in time. For the failure of this to occur in this family we have no explanation. The proband had symptoms of an ulcerogenic tumor simultaneous with symptoms of hyperparathyroidism, while his children first showed symptoms of hyperparathyroidism. Perhaps, what we are seeing here are variations of this autosomal dominant trait. It would seem logical to assume that those family members now afflicted will, in the future, have symptoms of an ulcerogenic tumor as their father has done. Perhaps they never will. One sibling presently is deviating from the pattern as evidenced by the suggestion of a pituitary adenoma. Other family members may in the future show still different manifestations of multiple endocrine adenomatosis.

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## *The President's Message*

During the last 12 months, it has been my privilege to serve as president of the Kansas Medical Society. As my term draws to a close, I would like to share a few thoughts and observations with the membership. Earlier in these pages, we commented at length on the beauty of our great state. Travel to almost every area of Kansas convinces us more than ever that we live in one of the truly beautiful areas of the United States, populated by a great people, and ably served by a noble medical profession. The quality of medical care in Kansas is essentially sound and delivered by dedicated physicians and by their co-workers in the health profession. This fact was brought home to me by my visits to the Councillor Districts, and each time I met with the doctors and their wives the fact was brought home to me even stronger. The visits were in large cities and in the small pleasant towns of our state. Many of the trips were by air, and to view Kansas from aloft is truly an inspirational sight made even more beautiful at night, as the myriad of lights sparkle like jewels on the plains below.

The overriding concern of the citizens of our state, as well as the members of the Kansas Medical Society, is to increase the supply of physicians. This was one of my goals, which I hope will be achieved in the years ahead as opportunities for medical education are enhanced and enlarged in this state.

In closing, it has been a memorable year for both myself and for Mrs. Reals, who has had the pleasure of traveling with me. To the incoming president, Dr. Kenneth Graham of Leavenworth, go my best wishes for a successful year. I know that he believes in the same goals as I do for your Kansas Medical Society. I know you join me in wishing him well in his presidency.



*Dr. J. Reals, M.D.*

*President*





## *Is There a Doctor in the Nation?*

**RALPH CRAWSHAW, M.D., Portland, Oregon**

(EDITOR'S NOTE: Ralph Crawshaw, M.D. is a practicing psychiatrist in Portland, Oregon and a graduate of the Menninger School of Psychiatry. In April, 1971, he attended the three-day Anglo-American Conference on Medical Care in London. In a delightfully irreverent report published in the January, 1972 issue of *The Pharos*, the quarterly publication of Alpha Omega Alpha Honor Medical Society, Dr. Crawshaw reports on the opinions and attitudes expressed by medical administrative leaders from both sides of the Atlantic. We think the Conference was a success if only for having inspired the following paragraphs of the report which we have excerpted with the kind permission of Dr. Crawshaw and Robert J. Glaser, M.D., editor of *The Pharos*. We pick up Dr. Crawshaw as he is leaving the meeting hall at the close of the Conference.)

As I moved to leave, a pleasant, slight man came up to me and asked if I would talk with him "since you seemed militant." I did not know what he meant but was intrigued, so despite my fatigue I settled in a back row with this South African physician turned reporter. He was six months out of medical residence and was now full time with a wire service. His question was persistent: "But what were the U. S. doctors so tense about? I could feel it but I could not understand it." I explained I did not know, for a number of reasons: ignorance, a provincial outlook, and the mental confusion resulting from too much input. In my opinion the meeting was a success, but the kind of success 20 blind men have in describing an elephant. However, I was willing to speculate on the tension, and hazarded that the cause was economic, even though an eloquent case could be made for the economic pressures, particularly when one considers that by 1980 approximately 10% of the gross national product will be spent on health. With those unbelievably gigantic sums involved, IBM begins to look like a cottage industry.

I added that professional identity seemed closer to

being the crux of the matter. The U. S. doctor, assailed by forces that he does not understand, resists change and unwittingly becomes the proponent of the *status quo*. These forces, like the problems of race, politics, education, and yes, even of religion, are difficult to comprehend. They are complex and complicated. When I asked if he were following me, he replied with an unconvincing, "Yes, I guess so."

"Well, look at it from the British view: What are the U. K. doctors so tense about? I will tell you one thing that has them tense but that never appeared on the agenda: race. Informally, three different physicians spoke to me of the race problems, one sharing his dismay that his wife had been spit upon and told to 'just wait till we take over.' Or maybe you watched that sea of coal-black hands surrounded by communistic flags in Trafalgar Square last Sunday and perhaps you heard them roar 'Kill the Bill.' Race tension is in both our worlds and affects everyone. We Americans are more explicit than the British, but that may be just a matter of timing. What is happening is deep shifts of power; those who have power are anxious and those who do not are anxious, too. It is as though the ship of state has cargo rolling free in the hold. Irrespective of responsibility, if the violence is not made fast the hull will go and we all sink.

"It all sounds irrational but not entirely so, if you take a broad enough view. Look, it may sound weird, but even Henry the Eighth is in the act. When he drove the Pope and the priests out of England, no 'legal' doctors remained, since the priests had controlled the medical delivery system of that time. He got around this by directly giving a royal charter to the profession, forming the Royal College of Physicians. In his wisdom, Henry made them independent, with the written proviso that they would never use their power to harm the state. This is where part of today's tension originates for the British, since now the state wants back some of the power.

"It is not money, it is not position, but it is threat

to the very identity of the profession that makes for the tension. How else could a next-to-nobody like Dr. E. V. Delphey in the twenties have successfully used such sleazy tactics as screaming Bolshevism to permanently derail the AMA's program of social leadership. I understand that Sir Henry Brackenbury was a little less obvious but just as successful about the same time in permanently removing the BMA as a progressive social force. If you doubt what I say, take a look at why Lord Russell Brain, an illustrious President of the Royal College of Physicians, was dumped by the BMA, or so I have been told. Certainly medicine has its corridors of power worthy of a C. P. Snow, but it is not in power nor in money, but in identity that the real tension lies in the form of chronic, pernicious, professional paranoia. In the individual or the group the dynamics are the same: 'Who am I? I am the person against . . . !'

"But you still do not understand? Let me try once more. It is the content of what is happening that is so difficult to understand. I do not mean the content of what is being said, but the historical content. Again, I may not be clear, but it is structure versus content. Structure is what everyone seems to be coming up with: how to build the world's mightiest, all-American, low-cost, self-service health industry. Again and again it is approached as an engineering problem. 'Systems' is the 'in' word but the word could just as well be 'statics.' They all seem to be engineers, hardly an architect in the group. The social engineers are prone to jurisdictional disputes because they fear the real challenge—the content. What we should look for is the most human institutional structure for the health of man, his whole health, mind as well as body. It makes as much sense to have Philistines plan universities, or atheists build cathedrals as it does to have social engineers design health strategies. Oh, all the government building codes will be met, and the roof

won't leak, but what of the content?

"All the talk of medical assistants, MEDEX, and the like is an illusion. It is an illusion because most patients, especially blue-collar workers, know or at least sense that doctor substitutes lack perspective, content if you will. Perhaps doctor substitutes do something cheaper or faster like drawing blood, checking a diabetic's diet or taking a history. But when things get serious, touch-and-go, the man you want when your child has a temperature of 104° or your wife has a lump in her breast is someone who knows alternatives, not just the next person along a line of referrals. You want a man who knows alternatives and has had experience with and in them. The only way he can be replaced is with another thoughtful, well-trained compassionate physician. And don't think I am waving a holy caduceus in front of you. I am talking about the crying need, largely unconscious, that the plain people have for content in their life and in the lives of those on whom they depend.

"But it is not just the people who need content. It is the profession as well. It takes a philosopher, historian, human scientist to supply content. In a few words, it takes the ancient ideal of the complete physician—a man of character. But where is he? Where is the man who will listen to a distant discipline? Where can we find someone who is not afraid of a computer readout? Who will compassionately live with the fact that every man is prejudiced? Where is the physician who is not intimidated by a government program, or worse, seduced by a government grant? A man not afraid of the clamor of 200,000 organized doctors? There is the problem. Find him, and then you can start at the real challenge, human content, not institutional form." I slumped in my chair; clearly I had said too much. My listener murmured his thanks and left me alone in the hall.

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### KMS MEMBERSHIP DIRECTORY—1972

The 1972 Membership Directory will be printed in July. It would be helpful if you would check your listing in the 1971 directory. If the information is incorrect, or if you have recently become a member of the Kansas Medical Society and were not listed last year, please notify the Society office in Topeka.

Membership listings include: name, address, telephone number, year of birth, sex, medical school, year of license and specialty.

Corrections or additions should be sent to the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

## SOMEONE SHOULD TELL THE FDA\*

As a result of a clinical investigation which found that several preparations of digoxin varied markedly in bioavailability even though they were all equal by USP chemical standards, the Food and Drug Administration will run tests on digoxin products for biologic equivalence.

Last year, clinicians of Columbia University College of Physicians analyzed four lots of digoxin because of observations that patients were responding atypically to carefully planned therapeutic schedules. The four lots of tablets were found to be chemically equal and within USP requirements. However, when administered to normal volunteers, the serum levels were found to vary markedly. In one instance the serum level was seven times that obtained for one of the other products.

Several of the patients were noted to have low serum levels of the drug even though they received as much as 1.0 milligram daily. The clinicians recommended that evidence of biologic equivalency of digoxin products should be required in addition to chemical equivalence.

This clinical report has prompted a natural and reasonable response by the FDA—tests will be run on some digoxin products for biologic equivalence.

However, other responses from the FDA have not been so rational. One response is that, while there is need to inquire into bioavailability, the across-the-board requirement of biologic equivalence in drugs is too knotty for immediate official action.

Another response is the FDA announcement that chemical analyses have shown some batches of digoxin which showed variations of from 60 per cent to 200 per cent of the declared amount of the active ingredient.

Another FDA response is the statement that biologic equivalence is considered by some to be a minor problem, by others a major consideration, and that FDA just does not presume to have the final answers.

There is also the quotation that one FDA official asks, "At what point do you stop applying the principle of requiring bioequivalence in drugs?" This seems a rather useless worry when it is considered that FDA hasn't even started applying the principle as yet. Someone should tell FDA that digitalis preparations would be a good place to start.

For a drug for which the proper therapeutic serum level is narrow and is balanced between a practically ineffective level when too low or a toxic effect when too high, and where individual patient tolerances and the effects of concomitant medication introduce significant variables, it is folly to work with a formula-

tion entirely bereft of either chemical or biologic equivalence, and even worse without both.

The FDA has been so busy eliminating time-tested and clinically valuable pharmaceuticals from the market that it has neglected to require that potent drugs like digitalis be manufactured in reliable form.

## Vox Dox

Vox Dox Editor:

The letter sent to our State Legislatures by Dr. Reals, our Society President, deserves some critical analysis.

I'm not sure that it advocates a solution to our primary concern, that is, of alleviating a physician shortage in our state. It is true that the Kansas Medical Society has long studied the problem of physician shortage and we are concerned, but about what? Dr. Reals' letter advocates expenditure of large sums of money to increase the number of doctors graduated by KUMC, but the number of doctors educated is not the public concern unless it directly reflects a favorable ratio of graduates to the number of doctors who become available for service to the people of Kansas. This the plan does not do.

We can't expect other states to educate doctors for us, but by the same token we should not expect to be educating doctors for other states—65% of KUMC medical graduates are leaving the state and do not return at this time.

Dr. Reals suggests that the plan proposed by the special committee on Delivery of Health Care is an excellent solution "one that would *educate* additional Kansas young men and women for *service* in Kansas." The plan would educate them, but does it insure that they give service in Kansas after they are educated? It does not.

Unless medical graduates can be persuaded to stay in Kansas, no plan or expenditure of money will alleviate the shortage. This plan is not the answer to the concern of those of us in the medical society who are seeking to alleviate the *shortage* of doctors *giving service* to the people of Kansas.

Sincerely,

ALBERT E. BAIR, M.D.  
Independence, Kansas

\* Reprinted from the *Journal of the Indiana State Medical Association*, February, 1972.



# KMS Information—Education

## *Annual Activity Summary, 1971/1972*

### **News Releases**

Fifty-five news releases were prepared and distributed by the agency to the various news media groups during the year.

Included on the media lists are all Kansas daily (52) and weekly (248) newspapers, radio (107) and television (13) stations, Associated Press and United Press International wire services bureaus in Wichita, Topeka and Kansas City, Mo., state and national health-related publications, and the *American Medical News*. In addition, the 165 members of the Kansas Legislature received selected stories. During the year, 20 releases were distributed to them as a means of increasing awareness of the KMS and its many public service projects.

The clipping service for print media continues to indicate good usage of KMS information by Kansas dailies and weeklies. Numerous releases stimulated additional editorial response, including ones on venereal disease in Kansas, the Society's stand on the welfare situation, and the House of Delegates' urging that amphetamines not be widely prescribed.

Much of the material distributed moved on both wire services and, therefore, received increased state-wide usage—particularly on the electronic media.

Also, a number of public service news releases were localized by the media, often quoting their own doctors on subjects. An example was the news release on the dangers of sunburning, which the *Kansas City Star* made into a local feature but did give KMS credit for being the news source. Another example was the "do-it-yourself medicine" release which stimulated several of the Wichita radio stations to ask for taped "actualities" for use on the air.

Localized news releases on each of the district meetings were distributed to the interested district media shortly before each meeting. They were not only widely used, but many newspapers and radio and TV stations developed in-depth print and electronic personal interviews while KMS representatives were in their areas.

Six items stemming from KMS news releases appeared in the *American Medical News* during the last few months of 1971.

In addition to the releases, a copy of Dr. Reals' "President's Message" for the August edition of the JOURNAL OF THE KANSAS MEDICAL SOCIETY was distributed to the media with a memo inviting them to

editorialize on his and the Society's efforts to "talk up the state as one means of encouraging new doctors to practice here" in Kansas. The response was most gratifying.

### **Fillers**

Three flights of from 30 to 50 fillers each were prepared during the year and forwarded to all Kansas daily and weekly papers. Again, the clipping service indicates high usage of these bits of health information, especially by the weeklies. This inexpensive facet of the communications program does much to increase name identity for the Society.

### **Publications Coordination**

The agency's continuity department provided coordination and research and editing services as requested by Dr. Reals for the "KMS in Action" newsletter and "President's Message" in the JOURNAL.

### **Radio Public Service**

KMS again joined the Kansas Association of Broadcasters in their non-commercial spot announcement program and received between \$15,000 and \$20,000 in "free" public service time during the year. Two flights ran, the latest from November 1 through December 31. A total of 33 stations programmed 1,401 spot announcements during that 60-day period.

### **Annual Meeting Media Coordination**

On-the-scene coverage of the annual meeting was provided by the agency. This coverage included liaison with the Topeka news media and wire service reporters, preparation and distribution of several state-wide news releases concerning the activities and complete coordination of four news conferences in three days. A similar program will be implemented for the upcoming Salina convention.

### **Other Activities**

These included continual research for additional ways to gain public relations benefits. An example was coordination of a telegram to the *Saturday Review* magazine on a "favorable" article on current delivery of health care. The telegram from Dr. Reals appeared as the lead in the "Letters to the Editor"

*(Continued on page 169)*

# Medical-Legal Page

## Hospital Liable for Respiratory Arrest and Quadriplegia

A seven-year-old hospital patient who suffered brain damage and became quadriplegic after a hose came off a respirator was awarded \$606,000 by a California jury. His parents were awarded \$20,000. While a motion for a new trial was pending, the case was settled for \$633,000 plus costs.

Suit was filed against the hospital when the boy suffered permanent brain damage and paralysis of all four limbs as a result of respiratory arrest followed by cardiac arrest. It was claimed that the hose came off the respirator and that, as there was no audible alarm on the cardiac monitor, the nurse did not observe a drop in heart rate and absence of respiration for at least five minutes.

The boy had severe and permanent brain damage. He was almost a quadriplegic and could not talk. Although he showed some signs of intelligence, he would be very difficult to educate, and he had a full life expectancy.

The hospital contended that a mucous plug probably started the respiratory difficulties and that the hose came off the respirator when the bed was moved in efforts at resuscitation. Further, the hospital claimed that an audible alarm was not standard on a cardiac monitor and that at the time the nurse had been occupied making medication notes.

The attorney for the hospital asked the jury for a verdict for the hospital or an award to the boy of \$350,000 to \$400,000. During settlement talks, \$1,940,000 was demanded for the boy and reduced to \$1,500,000. The hospital offered \$500,000, which was increased to \$750,000 and then to \$1,000,000.

After an 11-day trial, the jury deliberated for six hours before deciding on the awards of \$606,000 to the boy and \$20,000 to his parents.—*Chidester v. Stanford University Hospital* (Cal. Super.Ct., Santa Clara Co., Docket No. 223960, 1970)

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Reprinted from *The Citation*, Vol. 23, No. 4, 1971, published by the Office of the General Counsel, American Medical Association. Copyright, 1971, American Medical Association.

## New Kansas Law Defines Death

The first legislative definition of death in the history of the United States and of the common-law world has been enacted by the State of Kansas.

In the past, in individual cases, the law has accepted the medical definition of death as the cessation of all vital signs and has allowed the attending physician to make a determination of death. In practice, the law has required irreversible stoppage of all systems that could be detected and has not accepted the cessation of one vital system as a definition of death.

In 1968, at Harvard, the Ad Hoc Committee to Examine the Definition of Brain Death proposed a new definition of death based on irreversible coma. The clinical recommendations of this committee have since been followed on a worldwide basis.

The Kansas statute, discussed in the medical journal, provided two separate and alternative criteria for determination of death and leaves the determination in the hands of the attending physician.

The first criterion requires that spontaneous respiration and cardiac function be absent and that attempts at resuscitation be hopeless. The time of death is said to be when these functions cease.

According to the second criterion, death occurs when there is evidence that further reasonable attempts to maintain or restore spontaneous circulatory or respiratory function have no hope of succeeding and there is absence of spontaneous brain function. The law further specifies that death is to be pronounced before attempts at resuscitation or supportive maintenance are ended and before any vital organ is removed for transplantation.

The second criterion, which adopted the primary legal recommendation of the Ad Hoc Committee, is without precedent in the law anywhere in the world, the author of the journal article states. The Committee intended it as a means of protecting attending physicians from the accusation of being the last instrument of death when they turned off the heart-lung machine while the person was "legally alive."

The Kansas statute does not require that two physicians pronounce the death. It leaves the determination of various aspects of the definition to the medical profession.—*Legal and Medical Death—Kansas Takes the First Step*, by William J. Curran, J.D., 284 *New England Journal of Medicine*, No. 5, p. 260 (Feb. 4, 1971), published by the Massachusetts Medical Society, 10 Shattuck, Boston, Massachusetts 02115

# Woman's Auxiliary

## ... Auxiliary Annie recommends some interesting, relaxing reading

What's black and white and read all over? . . . *md's wife*, that's what!

"What's *md's wife*?" you say. Obviously you haven't looked on the coffee table lately. That question always makes Annie want to say "It's a bird! . . . No, I mean it's a woman! . . . I mean it's a magazine!"

And that's exactly what it is, a super-doooper whiz of a magazine and the favorite reading of many doctors' wives across the nation. Of course Annie is prejudiced because it is a magazine just for them. But she has a right to be partial, because we're told that *md's wife* has been judged one of the finest small publications in the country by editors who should know.

It's not the usual hum-drum type of club magazine, with page after page of tedious reports, lots of grey print and few pictures. *md's wife* starts with a beautifully designed cover done by a competent illustrator. The paper is a fine "slick" quality. Inside the magazine has 30 well-thought-out pages designed to interest every type of auxiliary member. Black and white or colored pictures accompany every article.

To begin with, it has coverage of auxiliary efforts at the national, state, and county levels. Naturally. That's the purpose of the magazine, after all. It does this by acquainting members with auxiliaries all over the United States by means of feature stories about certain people or auxiliary groups and their accomplishments. Other features are written about doctors' wives or their families who have particularly interesting and different hobbies or jobs. Sometimes medically oriented travel is included.

Articles about "historical" or famous doctors' wives are run to interest the history enthusiast. The magazine prints philosophical "think" pieces on problems that some physicians' wives experience because of the nature of their role as a doctor's wife. These articles are an effort to help solve similar problems, or at least to help the women recognize they are not the only ones who have them. The "think" articles not only get people thinking, some of them talk or write letters to the editors. The editors feel that's good. If people write in, it means they are reading the magazine, whether or not they agree with the author of the article. As a matter of fact, even the most controversial of the articles have received about

an equal amount of letters both in favor and disapproving of the material in question.

The magazine tries to appeal to all of its members, and it's a well-known fact that many of the auxiliary members aren't what you'd call exactly gung-ho about projects and that sort of thing. So the editors think that since it is the non-auxiliary oriented members' magazine too, something should be run for them. One such article is run in every issue and would compare favorably to features found in any top-flight women's magazine. After all, if you can get these women to open the magazine and read one article, they might read another, and another, and pretty soon it's sort of like eating peanuts or Crackerjacks . . . the more you eat, the more you want. Then presto! All at once the non-oriented auxilian is helping with a project, and soon she is dedicated. Don't sneer . . . it has happened and even when it doesn't, there still should be something for these women just to read and enjoy.

The magazine also makes auxiliaries across the nation acquainted with their state and national officers. It makes them further acquainted with their fellow auxiliaries in a four-page section called "County Communique." The letter is a selection of interesting news from counties over the states telling about their activities. These worthwhile ideas are written up news story type for others to read and use or modify. It spreads the word, in other words.

Finally, there is the AMA and our doctors. The magazine has a two-page color block section to brief the important news of the things the doctors wish the auxiliaries to know about or promote. This news is set up attractively on what is called a "double page spread" (two pages face to face) in four blocks of irresistible scintillating colors. The news literally hits them in the face, briefed so nicely the women have swallowed it and been educated almost before they know what is happening.

Oh yes, something else. Even doctors' wives deserve a laugh or two, so at least part of the time the magazine includes a strictly humorous article, frequently one that lampoons ourselves or our roles as your wives.

So there we have it . . . auxiliary news for those interested in state and national level, ideas and news for the many women at county level, features about special auxiliary projects or interesting physician fam-



ilies, other features about hobbies, sports or "anything different" for everyone, something funny or historical (no, I didn't say hysterical, although some of them are) articles, and briefs about important health or AMA news. All in 30 pages of quality reading, with good photographs or art work, and exceptionally fine magazine page make-up.

What's *md's wife*? You might call it a "shotgun prescription." It works well, that prescription. Try it yourself, doctor. Try it! You'll like it, you'll like it!

Literally yours, in more ways than one. . . .

Annie

## KMS Information—Education

(Continued from page 166)

section of a September issue. The *Saturday Review* has a circulation of 645,000.

Monitoring legislative activity with a bearing on the health-related fields which might prove newsworthy.

Continual research for ideas and information on which to prepare public service or newsworthy releases.

Close liaison with the officers and executive director of KMS for a continued beneficial information-education program.

## Agency Evaluation of the Program

Parkinson & Associates, Inc., feel the education-information program is reaching predetermined goals. The public is developing an awareness of the Society and the many ways its activities are of general benefit. Much progress has been made in developing a clearer public understanding of the physician's role in the health chain. Media acceptance of releases and feature suggestions is unusually high. The clipping service and member feedback attests that material we are preparing is being used. Calls from the wire services, daily newspapers, and the electronic media are increasingly more frequent—indicating growing acceptance for the program.

From an internal point of view, the deadline memo system of clearing stories has prevented any problems and has assured speedy response to negative stories that often move from the national level. The deadline memo system, in short, makes it possible to react while a particular story is still fresh in the general public's mind.

The excellent cooperation of Dr. Reals and the KMS staff has made our implementation of this program a pleasure. As the program enters its third year, we project an even greater public awareness of the KMS and its many beneficial programs.

## Chylangioma of the Mesentery

(Continued from page 147)

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(Continued from page 155)

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## NOMINATING COMMITTEE

The Nominating Committee met on Sunday, February 13, 1972, and submits the following list of nominations for the elective offices of the Kansas Medical Society. Wherever more than one nomination appears these are presented in alphabetical order. A very brief biography accompanies each name.

## President-Elect

Thomas F. Taylor, M.D., Salina. Born in 1926. Graduated from the University of Kansas School of Medicine in 1953. This year served as First Vice-President. Has served as Speaker of the House.

## First Vice-President

John N. Blank, M.D., Hutchinson. Born in 1907. Graduated from the University of Kansas School of Medicine in 1938. Is serving as president of the Kansas State Board of Health. Is past president of the Kansas Academy of Family Practice.

## Second Vice-President

Alex Scott, M.D., Junction City. Born in 1923. Graduated from the University of Wisconsin School of Medicine in 1948. Has served as Councilor.

Eugene T. Siler, M.D., Hays. Born in 1924. Graduated from the University of Kansas School of Medicine in 1952. Is serving as Councilor for District 13.

John W. Travis, M.D., Topeka. Born in 1929. Graduated from the Northwestern University School of Medicine in 1955.

Emerson D. Yoder, M.D., Denton. Born in 1914. Graduated from the University of Kansas School of Medicine in 1949. Is now serving as Constitutional Secretary.

## Constitutional Secretary

Phillip A. Godwin, M.D., Lawrence. Born in 1928. Graduated from the University of Kansas School of Medicine in 1955.

John D. Huff, M.D., Kansas City. Born in 1921. Graduated from the University of Kansas School of Medicine in 1952. Is currently serving as Councilor for District 2.

Robert P. Stoffer, M.D., Halstead. Born in 1926. Graduated from the University of Kansas School of Medicine in 1948.

## Treasurer

Chester M. Lessenden, Jr., M.D., Topeka. Born in 1918. Graduated from the University of Kansas School of Medicine in 1943. Is now serving as Treasurer.

## AMA Delegate

George E. Burket, Jr., M.D., Kingman. Born in 1912. Graduated from the University of Kansas School of Medicine in 1937. Has been President. Is now AMA Alternate Delegate.

James A. McClure, M.D., Topeka. Born in 1918. Graduated from the University of Kansas School of Medicine in 1944. Has served as President.

## AMA Alternate

Herman W. Hiesterman, M.D., Quinter. Born in 1923. Graduated from the University of Kansas School of Medicine in 1951. Is currently serving as Councilor for District 16.

M. Robert Knapp, M.D., Wichita. Born in 1923. Graduated from New York College of Medicine in 1947. Is now serving as Vice-Speaker.

George D. Marshall, M.D., Colby. Born in 1909. Graduated from the University of Kansas School of Medicine in 1936.

Evan R. Williams, M.D., Dodge City. Born in 1925. Graduated from the Northwestern University Medical School in 1952. Has served as Councilor.

## NECROLOGY REPORT

Following is a list of the members of the Kansas Medical Society whose deaths have been reported since the last meeting of the House of Delegates.

<i>Name and Address</i>	<i>Age</i>	<i>Date</i>
Leonard O. Armantrout, <i>Hoisington</i>	62	Feb. 25, 1972
Lewis C. Blackburn, <i>Chanute</i>	60	Nov. 11, 1971
Harvey L. Bogan, <i>Baxter Springs</i>	60	June 4, 1971
William M. Brewer, <i>Hays</i>	69	Feb. 17, 1972
William P. Callahan, Jr., <i>Wichita</i>	53	Aug. 16, 1971
Rodney G. Carter, <i>Independence</i>	73	Dec. 2, 1971
William H. Clarkson, <i>Manhattan</i>	95	Dec. 9, 1971
Herman E. Friesen, <i>Wichita</i>	78	Sept. 27, 1971
Bernice G. Havley, <i>Hanover</i>	65	Aug. 22, 1971
James H. Holt, <i>Wichita</i>	55	Oct. 13, 1971
Fred D. Lose, <i>Madison</i>	87	June 19, 1971
James J. Marchbanks, <i>Oakley</i>	48	Nov. 13, 1971
Bruce P. Meeker, <i>Wichita</i>	74	Dec. 16, 1971
William R. Miller, <i>Summerfield</i>	89	Jan. 28, 1972
Earl L. Mills, <i>Wichita</i>	68	Jan. 22, 1972
Frank A. Moorehead, <i>Neodesha</i>	63	Mar. 10, 1972
Laurence S. Nelson, <i>Salina</i>	78	July 29, 1971
J. H. A. Peck, Sr., <i>St. Francis</i>	80	Jan. 19, 1972
Martin Rucker, <i>Sabetha</i>	63	July 6, 1971
James L. Salomon, <i>Wichita</i>	51	May 22, 1971
Billy P. Sammons, <i>Salina</i>	43	Oct. 14, 1971
Allen W. Sandidge, <i>Mulberry</i>	72	Jan. 9, 1972
C. Herbert Smith, <i>Pittsburg</i>	77	July 19, 1971
Ralph Y. Strohm, <i>Fort Scott</i>	75	June 4, 1971
Edgar M. Sutton, <i>Salina</i>	82	July 30, 1971
Henry D. Thomas, <i>Bellerville</i>	88	May 26, 1971
Parke H. Woodard, <i>Lenexa</i>	76	Jan. 1, 1972

**The Journal accepts short classified advertising from the members of the Kansas Medical Society without a charge. These ads run in three consecutive issues of the Journal and are keyed with a correspondence number. All replies are forwarded immediately to the advertiser. Other brief classified ads are accepted from members of the medical profession only upon approval of the Editor or Editorial Board.**

# Screens for Peer Review Program

The Committee on Peer Review establishes the following screens as defining the normal range of health care for selected conditions.

These are intended for use by peer review committees as guides only. Screens provide a basic tool for the evaluation of medical practice, but individual variations which fall outside the screens do not by that fact alone imply that professional error occurred.

The attending physician must at all times treat each patient on the basis of his own professional judgment.

The following screens were taken almost entirely from the monumental work performed by the Metropolitan Health Care Foundation, Minneapolis, Minnesota. All that follows on this subject is copyrighted by the Metropolitan Health Care Foundation, 1971. The Kansas Medical Society gratefully acknowledges their permission for its use.

## **Section I. Preventive Medicine Screens**

### **ANNUAL EXAMINATION**

#### **1. Annual Adult Exam (Male)**

#### **2. Annual Adult Exam (Female)**

##### *Visits*

Office.

##### *Frequency of Visits*

Yearly.

##### *Criteria for Work-Up*

Review of history, interval history, physical examination.

Lab studies—CBC, urinalysis, Pap test, chest x-ray.

Other exams as indicated—Proctoscopic, G.I. series, Ba enema, excretion urogram, mammography, maturation index, endometrial biopsy, endometrial washings, cervical biopsy, chemistry profile, EKG.

##### *Criteria for Treatment*

Dependent upon findings from above.

##### *Duration*

Variable.

##### *Comments*

Family planning, marriage counselling, etc., will usually be taken care of with the premarital, OB follow-up, or yearly physical examinations.

#### **3. (Newborn) Infant Well Child Care First Two Years of Life**

##### *Visits*

Office.

##### *Frequency of Visits*

Eight in first year (monthly 1-5, 7th, 9th, 12 months), 15 months, 18 months and two years.

##### *Criteria for Work-Up*

PKU, hemoglobin, urine, tuberculin skin test.

##### *Criteria for Treatment*

Immunizations: Diphtheria, pertussis, tetanus ( $\times 3$ ), booster 18 months, trivalent oral polio ( $\times 3$ ), booster 18 months, smallpox, rubella, rubeola, mumps.

##### *Duration*

Two years.

##### *Comments*

This represents *preventative* medical care and evaluation.

### **IMMUNIZATION**

#### **1. Adults**

##### *Influenza*

##### *Tetanus Toxoid*

##### *Typhoid*

#### **2. Annual (Preventative) Evaluations (Children)**

##### *Visits*

Office.

##### *Frequency of Visits*

One per year.

##### *Criteria for Work-Up*

Hemoglobin, urine, Mantoux, audiometric and visual screening.

##### *Criteria for Treatment*

Booster immunizations—DPT plus trivalent polio. Age five years. Revaccination.

##### *Duration*

Until out of pediatric age range.

##### *Comments*

Yearly age two through five. Every other year age six and on.



## Section II. Outpatient Care Screens

### MEDICINE

#### 1. Diabetes Mellitus

##### *Visits*

Office, nursing home, outpatient, extended care facility; no hospitalization without other complications.

##### *Frequency of Visits*

Three visits during the first week, then once a month, every three months after stabilized. One visit allowed for insulin instruction.

##### *Criteria for Work-Up*

Complete history and physical examination, ophthalmoscopic examination, CBC, urinalysis, postprandial blood sugar, fasting blood sugar, EKG routine over 40, glucose tolerance test permissive. On a yearly basis there should be a chest x-ray (for TB) and an eye exam.

##### *Criteria for Treatment*

Insulin, oral hypoglycemic agents, ophthalmoscopic exam, diet.

##### *Duration*

Lifetime.

#### 2. Acute Upper Respiratory Infection in the Absence of a Complicating Factor

##### *Visits*

Office, home, nursing home, extended care facility.

##### *Frequency of Visits*

Between two and four visits, three to four days apart.

##### *Criteria for Work-Up*

Regional examination, chest x-ray, CBC may be indicated, throat culture.

##### *Criteria for Treatment*

Analgesics, sedatives, antitussives, expectorant, antihistamines, and chemotherapy and/or antibiotics.

##### *Duration*

Seven to ten days.

#### 3. Hypertension With Heart Disease

##### *Visits*

Office, outpatient, extended care facility, nursing home, home.

##### *Frequency of Visits*

Every day for three to four days, then once a week for a month, then once or twice a month.

##### *Criteria for Work-Up*

Complete history and physical examination, uri-

nalyses, CBC, EKG, chest x-ray, renal function tests (NPN, PSP, IVP, concentration tests, etc.), fluoroscopy permissible, serum electrolytes, urinary catecholamines, renal arteriograms, adrenal function studies, aldosterone tests.

##### *Criteria for Treatment*

Sedatives, tranquilizers, digitalis, anticoagulants, coronary vasodilators, antihypertensives, vasopressors and antiarrhythmics.

##### *Duration*

Chronic.

#### 4. Psychoneurosis and Personality Disorders

##### *Visits*

Office.

##### *Frequency of Visits*

One visit a week for four weeks; further treatment as indicated.

##### *Criteria for Work-Up*

As needed to rule out organic disease in system of symptomatic referral, complete physical examination, MMPI, psychometrics.

##### *Criteria for Treatment*

Sedatives, tranquilizers, antidepressants, and psychotherapeutic measures. Injections are rarely indicated and contraindicated chronically. Referral to psychiatrist should be considered.

##### *Duration*

Continuous, chronic and/or recurrent.

##### *Comments*

Cases of this category are under-reported. It is the unanimous desire of this committee that physicians would report this diagnosis. Usually this diagnosis cannot be made upon one visit. Since this may affect different systems, a complete history and physical is necessary to rule out organic disease. If indicated, a complete neurological evaluation may be done.

#### 5. Peptic Ulcers

##### *Visits*

Office, home, extended care facility, nursing home, outpatient.

##### *Frequency of Visits*

Initially, then in two weeks, then in six weeks (for x-ray), followed by once or twice a month.

##### *Criteria for Work-Up*

Complete history and physical examination, CBC, stool for occult blood, gastric analysis, Diagnex blue, x-ray—G.I. series, gallbladder, colon x-ray.

##### *Criteria for Treatment*

Analgesics, sedatives, tranquilizers, diet, antispasmodics and antacids.

*Duration*

Episodic or chronic.

**6. Anemia***Visits*

Office and/or hospital outpatient, or both in work-up.

*Frequency of Visits*

Work-up plus two visits during first week, then once a month on primary and as needed to clear up cause on secondary.

*Criteria for Work-Up*

Complete history and physical examination, proctoscopic examination, CBC, urine, gastric analysis, HCl, occult blood, bone marrow, Wintrobe indices, other blood studies as needed, i.e., Sickle cell, corpuscular fragility, serum iron if multiple occult blood is found, Schilling test, Diagnex blue test, x-ray—if occult blood is found, G.I. plus barium enema, G.U. tract, small bowel series, and chest x-ray.

*Criteria for Treatment*

B-12, folic acid, iron and diet, surgical and medical treatment as indicated.

*Duration*

Primary anemia—Once a month for life.

Secondary—Until etiology is determined and treated.

*Comments*

When possible, medication given continuously should generally be given by the patient or the patient's family under the general supervision of the physician, e.g., B-12; advise use of visiting nurse service; outpatient must refer to office and/or outpatient hospital care; work-up must be done in office and/or hospital at doctor's discretion.

**7. Hypertension Without Heart Disease Based Upon More Than One Elevated Blood Pressure Reading***Visits*

Office only.

*Frequency of Visits*

Initial diagnostic work-up plus one or two visits during the first week. No more than once a month thereafter, except in severe cases, then two to three times a month.

*Criteria for Work-Up*

Complete history and physical examination, CBC, urinalysis, EKG, chest x-ray, renal function tests (NPN, PSP, IVP, concentration tests, etc.), fluoroscopy permissible.

*Criteria for Treatment*

Sedatives, tranquilizers, and antihypertensives.

*Duration*

Chronic.

*Comments*

This is often a catchall diagnosis. A thorough diagnostic work-up is needed to confirm this diagnosis, inasmuch as it is only a clinical finding, not a disease entity.

**8. Rheumatoid Arthritis***Visits*

Office or hospital outpatient.

*Frequency of Visits*

Initial examination and treatment, then twice a week for two weeks, once per week for three months, and then monthly as indicated.

*Criteria for Work-Up*

Initial x-ray of affected joint, follow-up x-ray as indicated, CBC, urinalysis, sedimentation rate, uric acid, R.A. factor, L.E. cell test.

*Criteria for Treatment*

Sedatives, tranquilizers, analgesics, aspiration, chemotherapy, steroids, heavy metals, and x-ray therapy, physiotherapy; bracing and splinting.

*Duration*

Episodic or chronic.

**9. Osteoarthritis***Visits*

Office, home, hospital outpatient, E.C.F.

*Frequency of Visits*

Initial visit for examination and consultation, then once a week for three weeks, followed by once monthly.

*Criteria for Work-Up*

X-ray affected area and repeat if indicated, uric acid, CBC, sedimentation rate, R.A. factor.

*Criteria for Treatment*

Prescriptions for analgesics or anti-inflammation medications, physical therapy, prescriptions for bracing, monarticular injections if indicated.

*Duration*

Indeterminate.

**NEUROLOGY****1. Headaches (Migraine, Cluster, Tension, and Other, Such as Tumor)***Visits*

Office.

*Frequency of Visits*

Complete neurologic history and physical, one to four times per week for three months, one to four times per month for nine months, one to two times per month thereafter.

*Criteria for Work-Up*

EEG, skull and cervical spine, routine lab, brain scan, echogram, psychological testing.

*Criteria for Treatment*

Psychotherapy, medication.

*Duration*

Acute to chronic.

## 2. Cerebrovascular Accidents Including Aneurisms, Vascular Anomalies, Subarachnoid Hemorrhage

*Visits*

Office or home.

*Frequency of Visits*

Initial complete neurological history and examination one to four per month.

*Criteria for Work-Up*

X-ray, EEG, brain scan, routine lab as indicated, lumbar puncture, psychological testing, visual fields, audiometric and caloric examination, ophthalmodynamometry, nystagmometry, thermography.

*Criteria for Treatment*

Physical therapy, speech therapy, anticoagulant, medication as indicated, diet.

*Duration*

Indefinite.

## 3. Convulsive Disorders

*Visits*

Office or home.

*Frequency of Visits*

Initial complete neurological history and examination. Then one time per week for one month, one time per month for six months, then two to six times per month thereafter.

*Criteria for Work-up*

X-ray, EEG, brain scan, routine lab as indicated, lumbar puncture, psychological testing, visual fields, audiometric and caloric examination, nystagmometry.

*Criteria for Treatment*

Drug therapy, psychotherapy, counselling, diet.

*Duration*

Indefinite.

## 4. Parkinsonism

*Frequency of Visits*

One to two times per month.

*Criteria for Work-up*

X-ray skull, EEG, lab studies as indicated, psychological testing, brain scan.

*Criteria for Treatment*

Drug therapy, physiotherapy, psychotherapy.

*Duration*

Indefinite.

## 5. Multiple Sclerosis

*Visits*

Office.

*Frequency of Visits*

Complete history and neurological examination, one to two times per week to one to two times per year.

*Criteria for Work-Up*

X-ray studies, EEG, lab studies as indicated, psychological testing, lumbar puncture, brain scan, visual fields, nystagmogram, echograms, EMG.

*Criteria for Treatment*

Physiotherapy, drug therapy, maintenance steroid therapy, psychotherapy.

*Duration*

Indefinite.

## OBSTETRICS AND GYNECOLOGY

### 1. Amenorrhea (Primary and Secondary—To Include Oligo and Hypomenorrhea)

*Visits*

Office.

*Frequency of Visits*

Every two to four weeks. Oftener for cytologic studies.

*Criteria for Work-Up*

Complete history with emphasis on menstrual history.

General physical examination with special attention to pelvic exam, secondary sex characteristics, and endocrine stigma.

Routine lab studies—CBC, urinalysis, serology, sedimentation rate, chest x-ray, and Pap smear.

Special studies—Chemistry survey profile, thyroid function studies, vaginal cytology, endometrial biopsy, buccal/vaginal smears for chromosomal sex, visual fields, urine and blood endocrine studies, hysterosalpingography, skull x-ray, IVP, pelvic x-rays, pregnancy test, hormone assays including estrogens, pregnanediol 17-hydroxy corticosteroids, ketosteroids, ketogenic steroids, gonadotrophins, culdoscopy or laparoscopy. (Usually as inpatient.)

*Criteria for Treatment*

Correct nutritional and/or metabolic disorders,



psychotherapy, cyclic hormone therapy, gonadotropic hormone therapy (Clomiphene Pergonal therapy), cortisone suppression therapy, thyroid or other endocrine replacement therapy.

#### *Duration*

Twelve to twenty-four months. Longer in certain cases.

#### *Comments*

Hospital care may be required for certain surgical procedures or complicated endocrine problems.

## **2. Uncomplicated Pregnancy Routine Pre- and Post-Natal Care—Minimal Criteria**

#### *Visits*

Office.

#### *Frequency of Visits*

Every three to four weeks until last two months, every two weeks until 36 weeks, then every one week until delivery.

#### *Criteria for Work-Up*

Complete history and pelvic, Hgb (hemoglobin) or Hct (hematocrit), Rh and blood typing (including Coomb's on at least two occasions), serology, rubella titres, complete urine analysis and repeat sugar and protein each visit, TBC testing, chest x-ray as indicated, flat plate and pelvimetry as indicated, Pap smear, vaginal cytology if indicated.

#### *Criteria for Treatment*

Vitamins and hematinics (prenatal vitamins and hematinics), antiemetics, antinauseant, laxatives, sedatives, tranquilizers, immunizations as indicated, dietary counselling and prenatal classes.

#### *Duration*

Usually nine months; one or more post-partum visits as indicated.

#### *Comments*

Complicating factors such as diabetes, Rh-isoinmunization, toxemia, heart disease, renal disease, chronic hypertension, psychiatric illness, hyperemesis, incompetent cervix, habitual abortion, age and parity, etc., would require more frequent visits and additional lab studies.

## **3. Infertility—Primary and Secondary**

#### *Visits*

Office.

#### *Frequency of Visits*

Every one to four weeks during the first six months depending upon the problem, oftener for cytological studies, variable after six months.

#### *Criteria for Work-Up*

Complete history with emphasis on gynecologic and sexual problems.

General physical examination with special attention to pelvic examination and evidence of endocrine stigma.

Routine lab studies—CBC, urinalysis, blood grouping and Rh typing, erythrocyte sedimentation rate, serology, chest x-ray and Pap smear.

Special studies—Basal body temperature graphs, hysterosalpingogram and/or Rubin insufflation, culdoscopy or laparoscopy, Sims-Huhner test, endocrine studies (stimulation and suppression), vaginal cytology, endometrial biopsy, buccal/vaginal smears for chromosomal sex, chemistry survey profile, IVP, pelvic x-ray, sperm analysis and sperm antibody studies. Hormone assays as listed under amenorrhea.

#### *Criteria for Treatment*

Correction of nutritional and/or metabolic disorders; psychotherapy; correction of anovulation (Clomiphene, Pergonal, etc.); hormonal management of endometriosis; therapy of deficient luteal phase; therapy of hypoestrinism; artificial insemination (AIH) or (AID).

#### *Duration*

Usually twelve to twenty-four months. Longer in some cases, i.e., psychological problems, etc.

#### *Comments*

Hospital care may be required for certain surgical procedures or complicated endocrine problems.

## **4. Pelvic Inflammatory Disease**

#### *Visits*

Office.

#### *Frequency of Visits*

One to two times weekly until symptomatically improved, then at regular three to four week intervals as indicated.

#### *Criteria for Work-Up*

CBC, sedimentation rate, urine, Mantoux, smears, cultures and sensitivities, serology, dark field exam.

#### *Criteria for Treatment*

Antibiotics, analgesics, sedatives.

#### *Duration*

May vary considerably from months to years.

#### *Comments*

In-patient treatment may be indicated for severe or unresponsive cases.

## **5. Menstrual Disorders (Including Amenorrhea, Dysmenorrhea, Menorrhagia, Metrorrhagia, Oligomenorrhea, Premenstrual Tension, Polymenorrhea, Hypomenorrhea)**

#### *Visits*

Office.

*Frequency of Visits*

Varies with diagnoses—usually requires multiple visits for initial work-up and follow-up examinations.

*Criteria for Work-Up*

Complete history and physical examination, CBC, urinalysis, Pap smear, maturation index, also chemistry profile, endocrine survey, coagulation profile, pregnancy test, x-ray of chest, skull and salpingography. See also under "Amenorrhea."

*Criteria for Treatment*

Medical—Hormone therapy, thyroid.

Surgical—E.U.A., D and C, culdoscopy, colpotomy, peritoneoscopy, laparotomy, as indicated.

Psychotherapy—If indicated.

*Duration*

May vary from several months to indefinite for some cases.

*Comments*

This diagnosis may require hospital as well as outpatient visits, as the diagnosis and therapy dictate.

**6. Cancer Follow-Up Exams (GYN)***Visits*

Office.

*Frequency of Visits*

Variable—usually three to six months. May be twice a week if patient receiving radiation or chemotherapy.

*Criteria for Work-Up*

Interval history, physical examination, CBC and urinalysis, platelet count, chest x-ray, Pap test, special exams and procedures such as biopsies, proctoscopic exams, etc.

*Criteria for Treatment*

Dependent upon findings.

*Duration*

Indefinite.

**7. Vulvovaginitis***Visits*

Office.

*Frequency of Visits*

Weekly until remission of acute phase, then at two to four week intervals until symptom free.

*Criteria for Work-Up*

Smears, cultures, sensitivities, urinalysis, fasting blood sugar, two hours after meal and repeat as indicated, viral studies as indicated, serology, dark field exam as indicated.

*Criteria for Treatment*

Topical, oral and parenteral antibiotics (including

sulfas) antiviral and antifungal, antiparasitic or anti-protozoan, sedatives, tranquilizers, analgesics.

*Duration*

Usually four to six weeks, may vary depending on virulence of infecting organism and response to therapy.

*Comments*

None.

**OPHTHALMOLOGY****1. Glaucoma***Frequency of Visits*

First month, 14 or less visits; subsequent six months, six or less visits; then revert to routine glaucoma care schedule, eight or less visits annually.

*Criteria for Work-Up*

History (recommended)

Acute glaucoma: Pain, nausea, visual loss, red eye, family history.

Chronic glaucoma: Field loss, visual loss, inadequate control of glaucoma by medical means, photophobia (in congenital glaucoma), family history of glaucoma.

Secondary glaucoma: Uncontrolled intraocular tension, pain, blurred vision, redness of eye, precipitating causes.

Congenital glaucoma: Photophobia, cloudy cornea, enlargement of eye, family history of congenital glaucoma.

Medications: Ocular and systemic.

Physical examination (recommended)

Acute glaucoma: Intraocular tension, external exam, slit lamp exam, funduscopy exam, visual acuity.

Chronic glaucoma: Intraocular tension, slit lamp exam, visual acuity.

Physical examination (optional)

Acute glaucoma: Gonioscopy, tonogram, visual field, fundus photography, slit lamp with accessories.

Chronic glaucoma: Gonioscopy, tonogram, visual field, fundus photography, slit lamp with accessories.

*Criteria for Treatment*

Topical and/or systemic medications obtaining tension control in normal range. If tension not controlled medically, admit for surgery, if indicated.

*Duration*

Chronic.

*Comments*

Complications requiring more visits or further tests: Uncontrolled glaucoma, intolerance to medication, coexistent symptoms or disease, by report.

(Continued on page 218)

113th Annual Session

Kansas Medical Society

May 7-10, 1972

Statler-Hilton Inn—Salina

*Make Your Reservations Now!*



# Welcome to Salina

Salina, "The City on the Move," welcomes and invites you to attend the 1972 Kansas Medical Society Meeting.

We feel pleased and privileged to host this meeting.

We are grateful to have use of the Hilton Inn and the Salina Country Club for our activities.

We hope that many of you will join your official delegation and come to Salina to be heard on the issues facing us. Your delegates need your help and counsel in deciding how to vote.

Come and renew old acquaintances and make new friends at our meeting.

*Robert D. Lindeman, M.D., President*

Saline County Medical Society

# Distinguished Guest Speakers

Graduate, University of Tennessee College of Basic Medical Sciences, 1963. Postdoctoral Fellow in Physiology, Marquette University School of Medicine, 1965. Recipient of the Edward Rector Memorial Scholar honors, DePauw University, 1959. Has been assistant professor of Clinical Physiology and Biophysics at the University of Tennessee College of Basic Medical Sciences. Is now the Director of the Alcohol Research Center, Tennessee Psychiatric Hospital and Institute. Research interests include: pathophysiology of acute and chronic alcoholism, cardiovascular physiology, and psychopharmacology. Has written numerous articles on above topics.



**JAMES DAVID BEARD, Ph.D.**

Director, Alcohol Research Center  
Tennessee Psychiatric Hospital and  
Institute  
Memphis, Tennessee

Born in Dahlonega, Georgia. Graduate, Emory University School of Medicine, M.D., 1952. Has been medical director of the Drug Addiction Medical Service in the Department of Public Health, and the Narcotics Treatment Administration in the D. C. Department of Human Resources. Associated with the Saint Elizabeth's Hospital since 1967, in present position since 1970. Since 1965 has also been instructor in psychiatry at the George Washington University School of Medicine. Developed the first formal training program in group psychotherapy at Duke University. Specializes in treatment of drug addiction, and has published works on the subject.



**WILLIAM H. DOBBS, M.D.**

Medical Director  
Central Admission Service  
St. Elizabeth's Hospital  
Washington, D. C.

Graduated from the Creighton Medical School, Omaha, Nebraska. Interned at Wilford Hall, USAF Hospital, San Antonio, Texas. Was USAF Flight Surgeon. Is currently a flight instructor and senior flight medical examiner for FAA. Entered general practice in Phoenix, Arizona in 1965. Is now Vice-Chief of Staff at Phoenix Baptist Hospital. Is Chairman of the Drug Abuse Committee and Community Relations of the Maricopa County Medical Society.



**DAVID HOWARD KNOTT,  
M.D., Ph.D.**

Medical and Research Director  
Alcoholic Rehabilitation Unit  
Tennessee Psychiatric Hospital and  
Institute  
Memphis, Tennessee



**RICHARD T. RAPPOLT, SR.,  
M.D.**

Clinical Toxicology & General  
Practice  
San Francisco, California



**GEORGE E. STAVROS, M.D.**

Vice-Chief of Staff  
Phoenix Baptist Hospital  
Phoenix, Arizona

Graduate of Tennessee College of Medicine, M.D., 1963; Basic Medical Sciences, Ph.D., 1965. Member of the Advisory Board, Southeastern School of Alcohol Studies. Has written numerous articles dealing with his research interests in Pathophysiology of acute and chronic alcoholism (hepatic function, cardiovascular system, hematopoietic system, body fluids and electrolytes); cardiovascular physiology (effects of anesthetic agents on cardiovascular function, hemorrhagic shock, endotoxin shock); and Psychopharmacology. Is presently on the staff and is medical and research director of Alcoholic Rehabilitation Unit, Tennessee Psychiatric Hospital and Institute.

University of Nebraska School of Medicine, M.D., 1964. Has been Director of Poison Control Center, San Francisco; Analytical Toxicologist, Douglas County, Nebraska; Research Associate, Division of Biophysics Instrumentation at the Eugene C. Eppley Institute for Research in Cancer and Allied Diseases, the University of Nebraska School of Medicine. Serves as consultant for *Newsweek*, *Barron's*, *The Medical Letter*. Is the court physician for the County of San Francisco. Serves as physician for the Ford Motor Racing Team. Founder and Executive Editor of *Clinical Toxicology*.



Graduate, University of California School of Medicine, M.D., 1964. Specializes in toxicology and psychopharmacology. Is Founder and Medical Director of Haight Ashbury Medical Clinic. Has been associated with alcoholic and drug abuse clinics. Has lectured on toxicology (University of California Medical Center) and criminology (Berkeley). Is a consultant to the President's Special Action Office on Drug Abuse Prevention. Has received several research awards. Has published numerous books and articles dealing with drugs. Is Editor of the *Journal of Psychedelic Drugs*.



**DAVID E. SMITH, M.D.**

Medical Director  
Haight Ashbury Medical Clinic  
San Francisco, California

University of Louisville, D.D.S., 1947. University of Vermont School of Medicine, M.D., 1953. The George Washington University, LL.B., 1958. Since 1958 has been on the faculty of the George Washington University Schools of Medicine and Law. Served as Assistant Clinical Professor of Surgery. Established the Institute of Forensic Medicine. Co-author of a textbook, "Problems in Forensic Medicine." Has written articles for professional and lay journals on medical and medical-legal problems. Has produced public affairs telecasts, five of which have received "Emmys" for excellence in documentary television from the National Academy of Television Arts and Sciences. Is founder and director of the Airlic Foundation, an educational corporation.



**MURDOCK HEAD, M.D.,  
LL.B., D.D.S.**

Executive Director, Airlic  
Foundation  
Airlie, Virginia

# KMS ANNUAL MEETING FUN NIGHT MAY 9, 1972

The Singing Doctors: Missouri's Medical Minstrels



*Now surgery's the place for me,  
It offers opportunity  
For men who use their hands and not their heads,  
An extrovert who cuts and sews,  
We talk and egotism flows,  
And what we charge is better left unsaid.*

Such is the self-caricature of Dr. James T. (Jim) Brown, who organized "five more extroverts" into a performing group called "The Singing Doctors," a sextet today competing on phonograph records with Barbra Streisand and the Beatles.

"Actually," says the 47-year-old chief of surgery at St. John's Hospital, Springfield, Missouri, "we're probably more competitive with Soupy Sales, Walter Brennan and Mrs. Miller."

The Springfield physicians' show business "sideline"

came about quite by accident. Dr. Brown, active in his local Greene County Medical Society, was named entertainment chairman for the organization's annual banquet—but he was shocked to discover that the event's budget provided no funds to hire professional talent. "In despair, I wrote some lyrics lampooning the various specialties I knew would be represented in the audience and persuaded five good friends that they had to help me out.

"With trembling knees, we mounted the stage that night, feeling like human sacrifices to the cause of entertaining our colleagues and their wives."

The Singing Doctors were a smash hit in their debut.

"Our only problem was that we didn't have a number to encore with!" Dr. Brown recalls.

They now not only have an encore, but a bundle of numbers!

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**A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION**



# Hosts for the Meeting

## *Salina Physicians Arranging 1972 Session*

GENERAL CHAIRMAN—JAMES C. DOWELL, M.D.

PROGRAM COMMITTEE

James E. Roderick, M.D., Chairman

SPORTS DAY

Monte L. Allen, M.D., Chairman, Golfing

Lloyd W. Hatton, M.D., Chairman, Shooting

VISIT THE EXHIBITS—REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

## Sunday Afternoon, May 7, 1972

*Hilton Inn*

11:30 SECTION ON EAR, NOSE AND THROAT  
Suite 110-112

12:00 Kansas Allergy Society  
Dining Room  
Kansas Society of Anesthesiology  
East Dining Room, Holiday Inn

1:00 REGISTRATION—TICKETS—INFORMATION  
Main Lobby, Upper Level

HOUSE OF DELEGATES

Dover and Portsmouth Rooms, Upper Level  
*Clair C. Conard, M.D.*  
*Dodge City, Speaker*  
*M. Robert Knapp, M.D.*  
*Wichita, Vice Speaker*

2:15 REGISTRATION OF DELEGATES

3:00 FIRST SESSION

*The Saline County Medical Society will host a social hour for delegates and wives at the Salina Country Club. A limited dinner menu for your pleasure. Music for your listening and dancing enjoyment.*

TELEPHONE NUMBER

913 825-5159

Monday, May 8, 1972

Hilton Inn

MORNING

7:15 SPECIALTY SOCIETIES—Breakfast and Business Meetings  
Kansas Obstetrical Society  
Suite 110-112  
Kansas Section on Ophthalmology  
Inn Club

7:30 REGISTRATION—TICKETS—INFORMATION  
Main Lobby, Upper Level

8:00 REFERENCE COMMITTEE A  
Portsmouth Room, Upper Level  
REFERENCE COMMITTEE B  
Dover Room, Upper Level

VISIT THE EXHIBITS—REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
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SPORTS DAY

KANSAS MEDICAL SOCIETY GOLF, SKEET AND TRAP ASSOCIATION  
*Monte L. Allen, M.D., Salina, President*

10:30 GOLFING—Salina Country Club (East Iron Street; turn left at Marymount College)

1:00 SHOOTING—Salina Gun Club (West on Crawford Street to Burma Road; turn left and south 1½ miles)

FUN NIGHT

6:30 RECEPTION  
Salina Country Club

7:30 BUFFET DINNER  
“THE SINGING DOCTORS”—MISSOURI’S MEDICAL MINSTRELS  
DANCING—Stan Broadhurst Trio

TELEPHONE NUMBER ..... 913 825-5159

## MORNING

- 7:30 REGISTRATION—TICKETS—INFORMATION  
Main Lobby, Upper Level
- 7:30 PAST PRESIDENTS' BREAKFAST  
Suite 110-112

## DRUG ABUSE

### FIRST GENERAL SESSION

Dover and Portsmouth Rooms

*John C. Mitchell, M.D.*  
*Salina, Presiding*

8:50 WELCOME

*Robert D. Lindeman, M.D., President*  
*Saline County Medical Society*

RESPONSE

*William J. Reals, M.D., President*  
*Kansas Medical Society*

9:00 STREET DRUGS—PAST, PRESENT AND FUTURE  
*Richard T. Rappolt, Sr., M.D., A.A.C.T.*  
*Executive Editor, Clinical Toxicology*  
*San Francisco, California*

9:45 CLINICAL EXPERIENCE WITH DRUG USERS  
*David E. Smith, M.D., A.A.C.T.*  
*Founder and Director, Haight*  
*Ashbury Medical Clinic*  
*San Francisco, California*

10:30 INTERMISSION TO VIEW EXHIBITS

10:50 COMMUNITY APPROACH TO DRUG ABUSE  
*George Stavros, M.D.*  
*President, CODAC*  
*Phoenix, Arizona*

11:30 METHADONE PROGRAMS

*William H. Dobbs, M.D.*  
*Saint Elizabeth Hospital*  
*Washington, D. C.*



May 9, 1972

NOON

Busses will be provided and all those wishing to go to the luncheon should be at the Hilton Inn by 12:15 p.m., so the busses may proceed on schedule.

12:30 GENERAL LUNCHEON  
Cavalier Club

*William E. Mowery, M.D., Salina, presiding*

PROGRESS IN DRUG ABUSE PREVENTION

*Murdock Head, M.D., LL.D., D.D.S., Executive Director  
Airlie Foundation*

AFTERNOON

*Hilton Inn*

SECOND GENERAL SESSION

*Donald D. Goering, M.D.  
Salina, presiding*

2:30 RECENT ADVANCES IN PATHOPHYSIOLOGY OF  
ALCOHOLISM

*James D. Beard, Ph.D.  
Assistant Professor of Physiology  
University of Tennessee  
College of Medicine  
Memphis, Tennessee*

3:15 PHYSICIAN'S ROLE IN THE MANAGEMENT OF  
THE ACUTE ALCOHOLIC

*David H. Knott, M.D., Ph.D.  
Director of Research  
Tennessee Psychiatric  
Hospital & Institute  
Memphis, Tennessee*

VISIT THE EXHIBITS—REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

TELEPHONE NUMBER.

913 825-5159

Tuesday, May 9, 1972

*Salina Country Club*

EVENING

ANNUAL PRESIDENT'S BANQUET—KANSAS MEDICAL SOCIETY

5:30 RECEPTION FOR PHYSICIANS AND WIVES  
*Sponsored by K.U. Medical Alumni Association*

7:00 DINNER  
*William J. Reals, M.D., Wichita, presiding*

INVOCATION

INTRODUCTION OF GUESTS

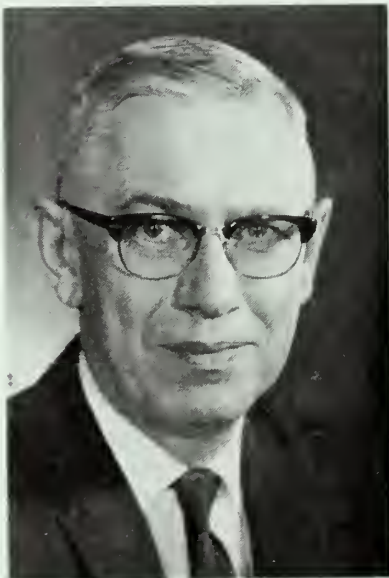
OATH OF OFFICE TO INCOMING PRESIDENT

"THE SWINGING AMBASSADORS"

*A Sony TV will be given away at the banquet. You must be present to win!  
Register at the Exhibit Booths.*

---

## President and President-Elect



WILLIAM J. REALS, M.D.  
Wichita



KENNETH L. GRAHAM, M.D.  
Leavenworth

SEE, HEAR,  
ENJOY!



## SWINGING AMBASSADORS



President's Banquet  
Tuesday, May 9, 1972



# Wednesday, May 10, 1972

*Hilton Inn*

8:00 REGISTRATION—INFORMATION

Main Lobby, Upper Level

8:30 HOUSE OF DELEGATES—SECOND SESSION

Dover and Portsmouth Rooms, Upper Level

12:00 LUNCHEON FOR THE HOUSE OF DELEGATES

Plymouth and Exeter Rooms, Upper Level

COUNCIL MEETING AT THE CONCLUSION OF THE HOUSE OF DELEGATES



Visit the Exhibits!

Register for Drawings!

Plymouth and Exeter Rooms, Upper Level

Hours

Sunday, May 7—2:00 p.m.-5:30 p.m.

Monday, May 8—7:30 a.m.-3:30 p.m.

Tuesday, May 9—8:00 a.m.-4:30 p.m.

A Sony AM/FM radio will be given away at the Sports Dinner on Monday evening, May 8.

A Sony portable TV will be given to the lucky winner at the President's Banquet on Tuesday evening, May 9.

YOU MUST BE PRESENT TO WIN!

TELEPHONE NUMBER

913 825-5159

# Exhibits

The exhibits will be open Sunday, 2:00 p.m. to 5:30 p.m.; Monday, 7:30 a.m. to 3:30 p.m.; and Tuesday, 8:00 a.m. to 4:30 p.m. Register at the exhibit booths for drawings to be held at the Fun Night Dinner on Monday evening, and the President's Banquet on Tuesday evening.

Booth No.		Booth No.	
1	WM. P. POYTHRESS & COMPANY, INC. Richmond, Virginia	13	LEDERLE LABORATORIES Pearl River, New York
2	MERRILL, LYNCH, PIERCE, FENNER & SMITH Kansas City, Missouri	14	C. RAY TYLER AGENCY, INC. Wichita, Kansas
3	WILLIAM H. RORER, INC. Fort Washington, Pennsylvania	16	THE COLUMBIAN SECURITIES CORP. Topeka, Kansas
4	AMERICAN MEDICAL FACILITIES CORPORATION Hazelwood, Missouri	18	CASUALTY INDEMNITY EXCHANGE Denver, Colorado
5	DUFFENS OPTICAL COMPANY Topeka, Kansas	19	WASHINGTON NATIONAL INSURANCE COMPANY Evanston, Illinois
6	BRISTOL LABORATORIES Syracuse, New York	20	ENCYCLOPAEDIA BRITANNICA, INC. Chicago, Illinois
7	THE MEDICAL PROTECTIVE COMPANY Fort Wayne, Indiana	21	SMITH, MILLER & PATCH, INC. New York, New York
8	E. R. SQUIBB & SONS New York, New York	22	MID-WEST SURGICAL SUPPLY COMPANY, INC. Wichita, Kansas
9	COCA-COLA U.S.A. Chicago, Illinois	23	G. D. SEARLE & COMPANY Chicago, Illinois
10	MUNNS MEDICAL SUPPLY COMPANY, INC. Topeka, Kansas	24	KANSAS BLUE SHIELD Topeka, Kansas
		25	MERCK SHARP & DOHME West Point, Pennsylvania

The Kansas Medical Society is grateful for  
the convention program grants received from

ELI LILLY & COMPANY  
Indianapolis, Indiana

A. H. ROBINS COMPANY, INC.  
Richmond, Virginia

A COFFEE LOUNGE WILL BE OPEN IN THE ASSEMBLY AREA  
THROUGHOUT THE CONVENTION—*Compliments of Berlin Wheeler, Inc.,  
Topeka, and Midland Credit Management, Inc., Hutchinson.*

# Woman's Auxiliary to the Kansas Medical Society

*May 7-10, 1972, Salina*

## *Sunday, May 7*

1:30-4:30 REGISTRATION—RESERVATIONS  
HOSPITALITY ROOM  
Suite 168-170, Hilton Inn

6:30 ALL-HOST PARTY  
COCKTAILS, DINNER, DANCING  
Salina Country Club

## *Monday, May 8*

8:30-5:00 REGISTRATION  
HOSPITALITY ROOM  
Suite 168-170, Hilton Inn

10:00 PRE-CONVENTION BOARD OF DIRECTORS  
MEETING  
Fine Arts Ballroom, Marymount College

12:00 SOCIAL HOUR AND LUNCHEON—HONORING  
STATE OFFICERS AND PAST STATE  
PRESIDENTS  
Salina Country Club

*Mrs. Marvin Gunn, President  
Woman's Auxiliary to the Saline  
County Medical Society, presiding*

2:00 GENERAL SESSION, PART I  
Fine Arts Ballroom, Marymount College

6:00 FUN NIGHT—RECEPTION AND DINNER  
Salina Country Club  
*Entertainment: The Singing Doctors*

## *Tuesday, May 9*

8:00-4:00 REGISTRATION  
HOSPITALITY ROOM  
Suite 168-170, Hilton Inn

## CONTINENTAL BREAKFAST

Fine Arts Ballroom, Marymount College

9:00 GENERAL SESSION, PART II  
Marymount College

1:00 LUNCHEON—HONORING MRS. ROBERT F.  
BECKLEY, PRESIDENT-ELECT, WOMAN'S  
AUXILIARY TO THE AMA  
Salina Country Club

*Mrs. Donald Pierce, President  
Woman's Auxiliary to the Kansas  
Medical Society, presiding*

5:30 K.U. MEDICAL ALUMNI RECEPTION  
Salina Country Club

7:00 PRESIDENT'S BANQUET—KANSAS MEDICAL  
SOCIETY  
Salina Country Club

*Entertainment:  
Singing Ambassadors*

## *Wednesday, May 10*

8:00 REGISTRATION  
HOSPITALITY ROOM  
Suite 168-170, Hilton Inn

8:30 BUFFET BREAKFAST  
Salina Country Club

9:30 POST-CONVENTION BOARD OF DIRECTORS  
MEETING  
Salina Country Club  
*Mrs. John B. Jarrott, presiding*



# Kansas Medical Assistants Society

*May 5-7, 1972, Hilton Inn, Salina*

## *Friday Evening, May 5*

- 7:00 PAST PRESIDENTS' DINNER—Elks' Club  
 7:30 REGISTRATION—Hilton Inn Lobby, 2nd Floor  
 8:00 "GATEWAY TO THE RAINBOW"—Banquet Hall  
     —*Courtesy Munns Medical Supply Company, Inc.*

## *Saturday, May 6*

- 7:00 EXECUTIVE BOARD MEETING—Suite 110-112  
 7:15 COFFEE—Dover Room  
     —*Courtesy Midwest Surgical Supply, Inc.*  
 7:30 REGISTRATION—Lobby, 2nd Floor  
 8:00 MINI TEST—Banquet Hall  
 9:30 CALL TO ORDER—Banquet Hall  
     *Agnes Agin, Salina, President*  
     *Kansas Medical Assistants Society*  
     *Presiding*  
 9:35 WELCOME  
     *Robert D. Lindeman, M.D., Salina*  
     *President*  
     *Saline County Medical Society*  
 9:40 RESPONSE  
     *William J. Reals, M.D., Wichita*  
     *President*  
     *Kansas Medical Society*  
 9:45 GREETINGS  
     *Rhea Bess, Salina*  
     *President*  
     *Saline County Medical Assistants Society*  
 9:50 HOUSE OF DELEGATES  
     *Helen Murray, Manhattan*  
     *Speaker of the House, presiding*

- 10:45 COFFEE  
     —*Courtesy Saline County Chapter*

- 12:30 LUNCHEON—"LET A SMILE BE YOUR UMBRELLA"—Dover Room  
     KMAS Component Chapter Presidents

- 1:45 GENERAL SESSION—Banquet Hall

*Mrs. Rudolph Walters, Salina, Organist for Social Hour, Banquet, and Luncheon.*

- 2:00 PROTECTING THE CONSUMER AGAINST DECEPTIVE AND MISBRANDED PRODUCTS

*Mrs. Lorena Meyers*  
*Consumer Specialist*  
*Department of HEW*  
*Kansas City, Kansas*

- 2:30 COFFEE  
     —*Courtesy Saline County Chapter*

- 2:45 PARABLES OF ANIMALS AND CHILDREN  
     *C. L. Olson, DVM, Salina*

- 3:15 NATIONAL OFFICER  
     *Mrs. Laura Lockhart, Vice Speaker*  
     *AAMA House of Delegates*

- 7:00 BANQUET—"OVER THE RAINBOW"—Banquet Hall

MASTER OF CEREMONIES  
     *Merle D. Hodges, M.D., Salina*  
     *Chairman, KMAS Board of Advisors*

INTRODUCTION OF CHAPTER PRESIDENTS, CMA AND KMAS PAST PRESIDENTS

SPEAKER: *Lt. James Elrod, Director*  
     *Youth Bureau Police*  
     *Department*  
     *Kansas City, Kansas*  
     "SELF DEFENSE OF WOMEN"

INSTALLATION  
     *Gertrude Suenram*  
     *Installation Officer*

## *Sunday, May 7*

- 7:30 EXECUTIVE BOARD MEETING  
     Suite 168-170

- 7:30 COFFEE—Dover Room  
     —*Courtesy Midwest Surgical Supply Inc.*

- 9:00 CALL TO ORDER AND ANNOUNCEMENTS  
     Banquet Hall  
     *Agnes Agin, President, presiding*

- 9:15 PANEL ON DRUGS  
     *Salina Drug Action Council*

- 10:00 COFFEE

- 10:15 "DUTY WITH MEDICO IN AFGHANISTAN"  
     *Alice W. Patterson, M.D., Larned*

- 12:30 LUNCHEON—"END OF THE RAINBOW"—Banquet Hall

INVOCATION

# House of Delegates

**Dover and Portsmouth Rooms**

**SUNDAY—MAY 7**

**2:15 Registration of Delegates**

**3:00 First Session**

**WEDNESDAY—MAY 10**

**8:00 Registration of Delegates**

**8:30 Second Session**

**Council Meeting and Luncheon at Conclusion of  
House of Delegates**

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## Reference Committees

**MONDAY—MAY 8—8:00 A.M.**

**Committee A—Portsmouth Room**

**Committee B—Dover Room**

# Councilor Reports

## *Activities in the Council Districts of Kansas*

### **DISTRICT 2**

Council District 2 is pleased to report the formation of the new Student Medical Society at KUMC.

During the past year, the Councilor has helped in the indoctrination of new members to the county medical society.

A combined meeting of Council Districts 2 and 3 was held in October, with the president of the Kansas Medical Society, William J. Reals, M.D., as the guest speaker.

This Council District has been active in the Legislative Committee during the current session of the Legislature.

JOHN D. HUFF, M.D., *Councilor*

### **DISTRICT 3**

As Public Law 89-749 requires the Johnson County Medical Society to participate in comprehensive health planning for the metropolitan Kansas City area in the form of the Mid-America Comprehensive Health Planning Agency, the Johnson County Medical Society is obligated to send a representative to this organization and to provide some financial support therefor.

The Mid-America Comprehensive Health Planning Agency has the responsibility "to review and comment" on all projected expansions and extensions of health services in greater Kansas City, including expansion of hospital facilities, the implementation of the HMO concept, and the initiating of the certified hospital admissions program (CHAP).

Although we of the Johnson County Medical Society look upon ourselves as representing the public interest in health matters, 89-749 calls us "providers" of health care, and it is our intention to participate in the Mid-America Comprehensive Health Planning Agency, both as representatives of the public and representatives of the physicians of the Johnson County Medical Society and the private practice of medicine.

Out of a membership of 60 persons on the Board of Directors of the Mid-America Comprehensive Health Planning Agency, 14 are doctors of medicine, only half of which represent the local county medical societies. The Johnson County representative is Eugene W. J. Pearce, past president of the Johnson County Medical Society, who has been and intends

to be an active, interested representative in the deliberations of the Board of Mid-America Comprehensive Health Planning Agency.

There is a committee that is actively engaged in a complete revision of the Constitution and Bylaws of the Johnson County Medical Society, as the present Constitution is outdated, having been written when the society was quite small.

The Johnson County Medical Society continues to be an active participant in the actions and deliberations of the Area Medical Council of the Kansas City metropolitan area. The Area Medical Council represents the county medical societies of Clay and Jackson in Missouri, and Wyandotte and Johnson in Kansas, plus other selected medical organizations which have been invited to participate. The Area Medical Council specifically and pointedly represents the attitudes, interests, and concerns of the practicing physicians and is a sounding board and clearing house for information and actions which require opinion and action of the medical profession in the entire metropolitan area.

DONALD J. SMITH, M.D., *Councilor*

### **DISTRICT 4**

The annual meeting of Council District 4 was held at the Besse Hotel in Pittsburg, Kansas on September 14, 1971 with Dr. William Reals, state president, as the main speaker. Attendance was considered excellent and this being the first Council District meeting for Dr. Reals as state president, we felt that his tour was off to a good start. Swede Swenson, from the state Executive Office, was also in attendance.

Our Council District has been set up and is ready to function when called by the state society for political action.

A new \$9 million medical facility has been opened in Pittsburg.

W. G. RINEHART, M.D., *Councilor*

### **DISTRICT 5**

During the past year, investigation into complaints about a physician in District 5 has demonstrated how difficult it really is to police ourselves.

The Oregon system places the main authority and



responsibility of discipline upon the medical society. In Kansas, this same authority rests with the Healing Arts Board, of whom medical doctors are a minority. Two thousand MDs are represented by only five members on the board. 550 chiropractors are represented by three members, and 150 osteopaths are also represented by three members. A far cry from "one man, one vote!"

Next year, under the executive governmental reorganization proposed, we should strive to regain responsibility for ourselves. Peer review, in this form, can become a reality.

Our new legislative liaison committee this year has been presenting our views to individual legislators. Each legislator has been assigned a "personal physician." They want to know how physicians feel about issues and problems, and when informed, the legislators generally act in the best interest of patient and physician alike.

Each year, the government encroaches further upon the practice of medicine. The velocity of this trend is slowed temporarily by the reality of the nation's inability to assume total responsibility for each individual. An improved peacetime economy with slowed inflation will certainly excite politicians to attempt nationalization of health care.

Each physician who desires to practice medicine in freedom must help protect it from governmental officials who infringe upon our practice with edict and legislation.

Your personal involvement in political action gives you the only voice politicians can hear. Further involvement to pass good legislation after the election insures you a voice in health legislation and, more vitally, the laws governing the practice of medicine.

GERALD L. MOWRY, M.D., *Councilor*

## DISTRICT 6

Intensive study of a possible foundation plan for the Shawnee County Medical Society has been under way for several months. This has been considered in the light of the Kansas Medical Society action in this regard and also considering the experience of other groups throughout the country. Also, in view of increasing interest in medical education in the Topeka area, a special committee has worked closely with representatives from KUMC. A number of plans are being considered and the emphasis here is on planning a program that will involve the three community hospitals in a joint educational program. Departmental scientific meetings are already functioning on a community-wide basis and a director of medical education may be hired soon. In addition, for several years varying numbers of medical

students have spent time with Topeka physicians in their offices, including internal medicine, pediatrics, orthopedics, dermatology, radiology, and pathology.

The physicians of this district are also taking the initiative in meeting with the various health planning committees and projects throughout the area. Experience is being gathered regarding the potential effectiveness and problems of neighborhood clinics in cooperation with neighborhood leaders, educators, ministers, and business people. The Shawnee County Medical Society is coordinating this kind of information through a special ongoing committee.

There is a genuine awareness and concern within the profession about these problems and it is felt that our local medical groups should take the lead in finding reasonable, effective solutions.

RICHARD R. BEACH, M.D., *Councilor*

## DISTRICT 7

The Flint Hills District has been tranquil this society year.

Our medical community received a tremendous boost by having an ophthalmologist, Frank Burgeson, establish practice in Emporia.

There continues to be a definite physician shortage, especially in urology, orthopedics, ENT, and family practice. A physician procurement committee continues active searching.

We were pleased to have Dr. Reals, KMS President, visit in November.

No other significant medical events have occurred.

E. G. CAMPBELL, M.D., *Councilor*

## DISTRICT 8

District 8, which is now composed of Butler, Cowley, and Greenwood Counties, held its district meeting in Wichita, October 20, 1971 with Districts 10, 11, and 12 also attending.

District 8 was not well represented at this Regional District Meeting, which perhaps indicates a need to revert back to individual district meetings. The county society meetings in the 8th District have been well attended and we have had many good scientific programs as well as discussions on the economics of medicine in Kansas and the nation. The support for the Sedgwick County suit against the Welfare Department was approved by a majority of members when presented originally last fall. However, a poll of all physicians in the district made sometime later showed about 2:1 opposition against the suit.

The circuit courses were held in Winfield this year and were well attended by physicians from sur-

rounding areas, including a number from Oklahoma.

This district, like the rest of Kansas, is somewhat short of physicians and we hope that all Kansas doctors will support the plan to have classes for medical students in Wichita for their clinical years. This would, perhaps, expose them to the more rural areas of Kansas and, perhaps, would encourage more of these young graduates to remain in Kansas to practice medicine.

The legislative program to inform the Kansas legislators on health related issues is excellent. It gives the physicians an opportunity to visit with their own legislators in a friendly and informal setting. This should not only be stressed during election years, but off-election years as well. Your Councilor or Alternate have attended all meetings of the Council and will attempt to keep you posted on issues of interest.

SIGURD S. DAEHNKE, M.D., *Councilor*

### DISTRICT 9

The annual meeting of the Ninth Council District was changed this year from its usual location in Salina to Minneapolis, Kansas in an attempt to procure better participation by doctors throughout the district. This was successful and well attended. Things got so hot at the meeting, that the local fire department had to be called to put out a chimney fire after which things settled down and President Reals gave a very interesting talk on the medical-economic developments on the state level. This was followed by an interesting discussion.

A committee of physicians from throughout the district has been set up for political action to contact state Representatives and Senators for medically related legislative proposals.

S. C. McCRAE, M.D., *Councilor*

### DISTRICT 10

District 10, comprised of Harvey, Marion, McPherson, Reno and Rice Counties, participated in a joint meeting of three Councilor Districts. The meeting was held in the downtown Holiday Inn, October 14, 1971. The object of the combined meeting was carried out with the hope that a larger group of physicians and wives would be in attendance, and with the hope that by doing so we could cut the number of meetings that our President, Dr. William J. Reals, is required to attend this year. There was a very interested group who attended, but it was disappointingly small. An excellent discussion was held with Dr. Reals presiding, and it is our hope that we can

continue to hold this type of meeting in the future, and that our attendance will become more adequate. I feel it is of major importance to our society to have these meetings where our Councilor Districts have a chance to really discuss the problems as seen in our particular areas with our president and other presiding officers.

A special meeting of the Council was held September 12, 1971. Several important matters were brought before the Council. One was the question of a suit against the State Welfare as to the legality of proration. After a lengthy discussion it was decided that a referendum of the membership would be called. In May 1971, the Kansas Medical Society passed Resolution 71-24 which gave birth to a new Legislative Policy Committee, and a report of the function and purpose of this committee was given by Dr. Blank.

The next Council Meeting was held October 31, 1971, and it was found that a vote was 264 in favor of a lawsuit, 246 opposed, and several Councilor Districts reported that their districts had rejected the lawsuit but had not sent in votes. For this reason the decision to go ahead with the lawsuit was tabled until each councilor could poll his own district and report to the Kansas Medical Society Executive Office.

Dr. Reals reported his formation of a Blue Ribbon Committee to study disagreements between physicians, Blue Cross and Blue Shield, and he announced the committee as follows: The Honorable Frank Carlson of Concordia, former governor and former United States Senator, agreed to serve as chairman on the committee; Mr. Jay Hambleton Abrahams, President of Security Benefit Life Insurance Company of Topeka; The Honorable Edward F. Arn, Wichita, former governor of Kansas; Mrs. Georgia Neese Gray, Topeka, former Treasurer of the United States; John L. Morgan, M.D., Emporia, former president of the Kansas Medical Society; Mr. Doyle D. Rahjes, to represent the Kansas Farm Bureau; Mr. George Trombold, Wichita, director of public relations, Boeing Aircraft Company. A motion was made and accepted to request a moratorium on actions regarding Blue Shield until the Blue Ribbon Committee could report to the Society at the House of Delegates Meeting.

Next, a discussion of the approval of the Articles of Incorporation for the Kansas Foundation for Medical Care was discussed and approved, and these Articles of Incorporation will be brought before the House of Delegates for approval at the next meeting.

In closing, I would like to tell you that during this legislative session our Legislative Policy Committee has set up a system whereby each of the Councilors is their contact for the Councilor District, and he has



set up a physician for each Representative and Senator from the district. These men have all agreed to make contact on a moment's notice. This has been implemented and has worked excellently. I think that this has been very wonderfully accepted by our membership and that it has proved very effective as far as medical legislation is concerned. This has been a busy and good year, and Councilor District 10 has had no individual problems of any magnitude and has cooperated excellently in working to solve the problems that all of medicine in Kansas has had.

RICHARD M. GLOVER, M.D., *Councilor*

### DISTRICT 11

The activities of Sedgwick County have been varied as well as active.

The suit brought by the Medical Society of Sedgwick County against the State Board of Social Welfare regarding the Title XIX program, in which the State Society joined as an *amicus curiae*, was decided in the society's favor by the District Court in Wichita. The Board of Social Welfare has seen fit to appeal this and at the present time the suit is being appealed to the Supreme Court. The Department has also seen fit to change the wording of the Title XIX program, removing "usual and customary" and leaving only the adjective "reasonable" to describe the fees. At this time, only the representatives of the hospitals and care homes have challenged the Board of Social Welfare on this and sought a definition of the term "reasonable."

The Society has also been involved in planning the financial aid program for third action year of the Model Cities program. Representatives of the society along with representatives from the other provider groups have met together and with members of the Model Cities Health Task Force to devise and modify the previous plan. At the present time we are still working with the Department of Community Health, which serves as the delegate agency, and the City Demonstration Agency, to broaden the concept of eligibility to receive medical care. At the present time, it is limited only to heads of households in order to make them more employable or to keep them employed. This greatly limits the scope of services to be provided and it is hoped this definition of eligible persons will be broadened to include the original proposal. Until the time that a satisfactory solution can be found, the representatives from the society and the other provider groups have felt it best to refrain from endorsement of the program.

At its December meeting, the Society endorsed the concept of a Foundation Program to take over the Title XIX program for the Sedgwick County

area. A committee appointed for this purpose has met diligently with the State Board of Social Welfare and other provider groups to devise a satisfactory plan. There have been some objections raised, not from the local providers but from representatives of some of the state provider groups.

At the present time, negotiations are still under way. The Articles of Incorporation have been submitted and approved by the society, and an application for a planning grant has been submitted to the federal government. The committee is hopeful that the plan will be near completion at the end of this year. A committee of the Medical Society has also been appointed to work as a liaison committee with Dr. Rieke from KU Medical Center, and Dr. Reed from Wichita State University, on the mechanics of establishing an arrangement with the Medical Center whereby students from the Center would come to Wichita for part of their clinical years. The society went on record as supporting this concept at its December meeting and directed the committee to give full cooperation to KUMC and Wichita State University in establishing this relationship.

The Medical Society Career Loan Fund now is helping 13 students through KU Medical Center. The Loan Fund provides funds to pay tuition and books for deserving students. An interest rate of 2 per cent is charged and the student agrees to repay the loan two years after graduation from Medical School. The fund is sustained through gifts from the Women's Auxiliary by their Christmas card sale, memorials, and gifts from physicians and other interested parties.

At the beginning of the year, the society retained the firm of Sullivan and Higdon to handle its PR program. The Board of Directors has also designated spokesmen from various specialties to provide information in their specialty to the various news media. This has served to help the reporter obtain the factual story prior to its publication. A brochure containing information of the various health facilities within the community and also the method of obtaining medical care was prepared for distribution by the Welcome Wagon to newcomers to the Wichita area.

In October, a delightful Oriental trip was planned by the Intrav Company of St. Louis, Missouri under the sponsorship of the Oklahoma Medical Society and the Medical Society of Sedgwick County. The 70 physicians and their spouses from the Sedgwick County and Kansas area who made the two-week trip were highly complimentary of their stay and accommodations and had a most enjoyable time. The society at the present time is considering a Mediterranean trip for the fall of this year.



The first of the year saw the initiation of the society's paging system. This system provides one way voice communication to notify the physician of a call for him. The unit is lightweight, can be carried in a shirt pocket, and has a radius of 20 miles. It is hoped that this will avoid the necessity of the physician having to carry two or three paging units from the various local hospitals. At the present time, the system is undergoing a trial run with about 50 doctors having the device in order to work out any difficulties that might be encountered before opening the system for general use.

The early part of February, a dinner was held by the society for the State Representatives and their wives. It was a most enjoyable affair with both parties learning a little bit more about the problems that the other faces in their respective fields. The evening was low key and like its predecessor, was well received by the legislators. The physician contact man for the particular legislator was asked to contact the legislator and act as his host for the evening. It is planned to make this an annual affair and the Legislative Committee feels that much has been accomplished by this. It is hoped that other societies may wish to consider this as part of their legislative program.

Surgi-Center, an experiment in ambulatory outpatient surgery in an effort to reduce the patient's cost for health care, has been a subject of some study in the Wichita community. Patterned after the successful Surgi-Center in Phoenix, Arizona, a society member proposed such a center for the Wichita area. Representatives of the society were asked to serve on a committee of the Community Health Planning Council to study the need for such a center. This committee studied not only the Surgi-Center proposal, but also proposals by the various hospitals for an establishment of their ambulatory outpatient facilities. A favorable decision was rendered for both the Surgi-Center and the hospitals to pursue their programs independently of each other. The society has been asked by the originator of the proposed Surgi-Center to provide a group of physicians of various specialties to determine what procedures will be done at the Surgi-Center, criteria for physicians who wish to do procedures in the Surgi-Center, and provide an ongoing evaluation of the facility. At present it is hoped to have a Surgi-Center in operation by the fall of this year. This certainly represents an innovative method of attempting to hold health care costs down and it will be interesting to see if the Surgi-Center in Wichita enjoys the rather phenomenal success that it has in the Phoenix area.

WARREN E. MEYER, M.D., *Councilor*

## DISTRICT 12

Council District 12 held a combined district meeting with District 10 in Wichita, in October. I thought this was an excellent idea, but evidently other doctors did not approve, for there were no members from the Tri-County Society and only a few from the Pratt-Kingman Society were present.

Our only problem is securing more doctors to help with the ever-increasing demands of medical care.

VERNON W. FILLEY, M.D., *Councilor*

## DISTRICT 13

Councilor District 13 is composed of Ellis, Ellsworth, Graham, Osborne, Phillips, Rooks, Russell, Smith, and Trego counties. The District Councilor meeting was to be held on December 9, 1971, but due to inclement weather it was cancelled. It was re-scheduled for the next Central Kansas Medical Society meeting.

The major problem in this district again is the difficulty in recruiting physicians for the smaller communities. Dr. Mary Glassen, of Phillipsburg, was forced to retire for health reasons, leaving that town with only one physician. Dr. Harold See has left Hill City, leaving only the one physician there. Hays has been fortunate this year with the addition of Dr. Anibal Medina, who is practicing urology. An internist, a general surgeon, and an anesthesiologist are expected in Hays within the next few months.

The physicians in Hays have been actively engaged in attempting to bring about some type of consolidation of the two hospital facilities here, and appreciate the support of the president of the Kansas Medical Society.

I wish to personally thank the members of the 13th District Peer Review Committee and the Legislative Committee for their efforts during the past year.

EUGENE T. SILER, M.D., *Councilor*

## DISTRICT 15

This has been a rather quiet year in the Fifteenth District. Health manpower has remained much the same. There are some new men coming into the area, but the demand still remains much the same for some places. A very successful annual district meeting was held in Dodge City in the fall, with the State Society being well represented by the President, Dr. Reals, and Oliver Ebel. It is hoped that a better representation of the district societies will be reached next year. The question of a new hospital for Dodge City is still in the planning stages and is

now involved along with a grant from the federal government to determine the feasibility of a HMO in this area.

R. H. HILL, M.D., *Councilor*

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### DISTRICT 16

District 16, as well as the entire Kansas Medical Society, was saddened by the death of our colleague and friend, Dr. James J. Marchbanks, who died November 13, 1971 while fighting a grass fire on a Boy Scout outing. We will all miss him.

At our December Council District meeting, our state president could not be with us because of inclement weather. Dr. Edward Steichen, State Representative, filled in by reviewing for us various aspects of interesting pending legislation.

Something has to be done to get more doctors for Northwest Kansas. In a few years, if the present rate of attrition continues, health care delivery in this area will be deplorable. All present proposals by health planners and politicians, as I understand them, are not the answer for Northwest Kansas. We just plain need more doctors.

In behalf of all the physicians of District 16, I wish to thank the doctors of the Colby Clinic and their staff for their secretarial and organizational help.

HERMAN W. HIESTERMAN, M.D., *Councilor*

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### DISTRICT 17

The Council has not had too many problems, but has discussed at various meetings the following: who should be allowed to take x-rays? Should paramedics be approved? Progress on malpractice legislation; state prepaid insurance; welfare fees and costs.

There was a program on the Manic Depressant by Lakeside Laboratories.

In July, Dr. Reals and Oliver Ebel gave us an informative program.

GALEN W. FIELDS, M.D., *Councilor*

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### DISTRICT 18

The District 18 meeting, with President Reals, was held in conjunction with Districts 2 and 3 in Kansas City. The attendance from District 18 was

not as large as usual and it was felt, by those who did attend, that subsequent meetings be held separately within the district as before.

Construction of the new Ransom Memorial Hospital in Ottawa should begin this spring, after several delays in meeting federal and state regulations. Federal funds have been approved to supplement funds obtained from municipal bonds. A new maintenance building has been constructed at the Lawrence Memorial Hospital which will allow for further expansion of other clinical areas of the hospital. Plans are still being completed for construction of new office buildings for doctors in Ottawa and Lawrence.

Dr. Frank Reyes has recently established his practice in general surgery in Ottawa, which will relieve some of the shortage in that area. Dr. Gary Owens has joined the practice of Drs. Wilcox, Hermes and Buck in obstetrics and gynecology in Lawrence. They are now also serving as consultants for Ransom Memorial Hospital in Ottawa. Dr. Glenn Madsen has joined Dr. Hiebert in the practice of radiology in Lawrence, and they are also providing radiology coverage for Ottawa.

Lawrence Memorial Hospital has joined the Tele-lecture network, sponsored by the University of Missouri Medical Center in Columbia as part of the Missouri Regional Medical Program. This has only recently been started and the value is yet to be determined.

Ransom Memorial Hospital also has reverted its Extended Care Facility beds back to the general hospital. This was necessary because of the delinquency in the government paying the bills and also the lack of enough patients to qualify to keep the beds occupied. For similar reasons, twenty of the thirty beds in the Extended Care Facility in Garnett have been changed to skilled nursing beds. Both Lawrence and Paola have had similar experience in the past, as I suspect is true throughout the state.

Concerning the question of seeking an injunction against the State Board of Social Welfare, my informal survey of this district revealed the same impression that was obtained by the mailed questionnaire: that is, about 25 per cent for, 25 per cent against, and 50 per cent not committed enough to return the questionnaire. Perhaps with adequate funds by the State Legislature, this will no longer be such a critical issue.

DELMONT C. HADLEY, M.D., *Councilor*

# Resolutions

*To Be Introduced at First House of Delegates, May 7, 1972*

## REFERENCE COMMITTEES

### REFERENCE COMMITTEE A

Gerald L. Mowry, M.D., Manhattan, *Chairman*  
Max S. Allen, M.D., Kansas City  
Ralph Hale, M.D., Wichita  
George D. Marshall, M.D., Colby

### REFERENCE COMMITTEE B

Spencer C. McCrae, M.D., Salina, *Chairman*  
Edward G. Campbell, M.D., Emporia  
Ivan E. Rhodes, M.D., Wichita  
John A. Segerson, M.D., Topeka

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*An asterisk following the resolution number indicates that those resolutions require a change of the Constitution and By-Laws, and a two-thirds majority vote of the House of Delegates is needed.*

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## RESOLUTION NO. 72-1

### REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Home Health Care

WHEREAS, There is a need for greater provision of home health care services as outlined in Doctor Leslie E. Becker's paper which appeared in the February 1972 issue of the KMS JOURNAL; therefore be it

*Resolved*, That the Kansas Medical Society supports and commends any recognized body who endeavors to provide or underwrite home health care.

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## RESOLUTION NO. 72-2

### REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Visiting Nurse Associations and Similar Home Health Care Agencies

WHEREAS, The need for control over inpatient costs has been announced nationwide repeatedly; and

WHEREAS, Primary care at home by qualified nurses could forestall hospitalization, emergency

room visits and office visits, and maintain an individual in a stable and familiar environment; therefore be it

*Resolved*, That the visiting nurse associations and all similar home health care agencies be supported in their attempt to receive more third-party coverage for medical and health care efforts in the home, provided that adequate and continuous training, accredited by the proper local medical society, is available to qualify such personnel for increasing responsibilities in their role.

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## RESOLUTION NO. 72-3

### REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Diploma Nursing Schools

WHEREAS, The diploma nursing schools in the past have provided a very satisfactory level of nursing education; and

WHEREAS, we need all available sources of nurses; therefore be it

*Resolved*, That the Kansas Medical Society continue to endorse and support those diploma nursing schools who find it feasible to remain in operation.

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## RESOLUTION NO. 72-4

### REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Education)*

### Physician Shortage

WHEREAS, Resolution 70-17 was on the subject of physician shortage and has never been implemented because several committees were already studying parts of the problem; and

WHEREAS, These committees have not reported on the matter covered by Resolution 70-17; and

WHEREAS, Even if they had, a piecemeal approach is not adequate; therefore be it

*Resolved*, That the Resolution 70-17 be promptly and effectively implemented.



**RESOLUTION NO. 72-5**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)***Title XIX "Medicaid" in Kansas**

WHEREAS, The medical profession recognizes the humane intent of the federal law, Title XIX of the Social Security Amendments, to provide medical care for the indigent; and

WHEREAS, The medical profession feels this humane intent should not be subrogated through state political activity; and

WHEREAS, every provider under the Medical program in Kansas has repeatedly requested that proration *not* be put into effect; therefore be it

*Resolved*, That the Kansas Medical Society again go on record as requesting the State Department of Social Welfare in the State of Kansas to follow the letter of the law in the administration of the Title XIX program in Kansas.

**RESOLUTION NO. 72-6**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***Foundation**

*Resolved*, That the Kansas Foundation for Medical Care is hereby prohibited from ever functioning as an agent for the federal or state governments.

**RESOLUTION NO. 72-7**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***Direct Billing**

WHEREAS, Almost every week new directives come from Medicare listing additional procedures they will not cover; and

WHEREAS, As a result of this, their national publicity about rejected claims brings discredit on the medical professions; therefore be it

*Resolved*, That the doctors return to the two-party relationship and bill the patients directly for their services, providing that the doctors will endeavor to help their patients get reimbursement from Medicare.

**RESOLUTION NO. 72-8**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***Relationship with Blue Shield**

*Resolved*, That the Kansas Medical Society withdraw from its relationships with Kansas Blue Shield, and that the Kansas Medical Society recommend to its membership that it resign from its participating agreements.

**RESOLUTION NO. 72-9**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***Reorganization of Medicine**

WHEREAS, The AHA has proposed reorganization of medicine based upon hospital staff membership to replace existing organizations based upon county medical societies, state medical society, and the AMA; and

WHEREAS, This would not be in the best interests of the citizens of the United States; therefore be it

*Resolved*, That the delegates from Kansas to the AMA be instructed to submit a resolution at the next session of the AMA House of Delegates decrying the AHA action; and be it further

*Resolved*, That this resolution contain methods to implement the active resistance to such concepts.

**RESOLUTION NO. 72-10**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***Changes in Malpractice Laws**

*Resolved*, That the Kansas Medical Society supports the Malpractice Committee's efforts to get changes in the law relating to arbitration, doctrine of informed consent, statute of limitations, *res ipsa loquitur*, and limitations on contingency fees.

**RESOLUTION NO. 72-11**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Education)***Physicians' Assistants**

WHEREAS, The term "Physicians' Assistants" is inadequately defined; and

WHEREAS, Many physicians think in terms of nurses as the physicians' assistants; and

WHEREAS, There is a tendency to think of ex-medical corpsmen from the military as physicians' assistants; and

WHEREAS, The medical corpsmen were non-commissioned in the service as compared with nurses who are commissioned officers; and

WHEREAS, Ex-medical corpsmen require and command significantly higher salaries when employed as physicians' assistants; and

WHEREAS, Kansas physicians need workers to carry on functions which various types of so-called physicians' assistants have performed; and

WHEREAS, Educational programs for health workers for this role cannot be adequately planned without better defining the term and the functions of the workers; therefore be it

*Resolved*, That the Kansas Medical Society constitute a joint study group with the Kansas State Nurses Association, the Kansas League for Nursing, the University of Kansas Medical Center, State Board of Regents, and others to help define the functions and education for physicians' assistants.

## RESOLUTION NO. 72-12

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Physician Proficiency

*Resolved*, That the Kansas Medical Society, in conjunction with the University of Kansas Medical Center, embark upon a study of the entire subject of physician proficiency and educational requirements. The study should include consideration of at least the following points:

1. The definition of minimum (educational) requirements at graduation from Medical School.
2. The minimum and ideal amounts and types of continuing education necessary to remain proficient.
3. An ongoing program of education, review, and required recertification of basic emergency procedure skills for all physicians.
4. An evaluation of methods to assure proficiency.
5. The educational value of contact with patients and with fellow physicians in discussions and in consultation not be forgotten.
6. The concept of earned status continue to be permanent while maintenance of proficiency would be a continuous function; and be it further

*Resolved*, That the President of the Kansas Medical Society appoint a committee for the purpose of conducting this study, and that the committee be instructed to report to the House of Delegates at its next Annual Meeting.

## RESOLUTION NO. 72-13

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### KMS Journal

WHEREAS, The KMS JOURNAL plays an important part in the activities of the Society; and

WHEREAS, It appears that the JOURNAL is facing increasing financial problems; therefore be it

*Resolved*, That the House of Delegates of the Kansas Medical Society authorizes the placement of ads in any segment of the JOURNAL if it will enhance the financial situation of the JOURNAL.

## RESOLUTION NO. 72-14

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Miss K. Agnes Burns

WHEREAS, Miss K. Agnes Burns served the Wyandotte County Medical Society as executive secretary for many years; and

WHEREAS, Miss Burns' service was really a labor of love and her activities represented efforts above and beyond the call of duty; and

WHEREAS, the Wyandotte County Medical Society elected Miss Burns to honorary membership in the society at the time of her retirement as executive secretary; therefore be it

*Resolved*, That the Kansas Medical Society likewise elect Miss K. Agnes Burns to honorary membership in the Kansas Medical Society.

## RESOLUTION NO. 72-15

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Wyandotte County Medical Society)*

### Mr. Blake A. Williamson

WHEREAS, Mr. Blake A. Williamson has been a friend of medicine in the State of Kansas for many years, both as a lawyer and as a legislator; and

WHEREAS, Mr. Williamson has exhibited long and notable service in the interest of the medical profession; and

WHEREAS, The Wyandotte County Medical Society elected Mr. Williamson to honorary membership in the society at the time of his retirement from legislative activity; therefore be it

*Resolved*, That the Kansas Medical Society likewise elect Mr. Blake A. Williamson to honorary membership in the Kansas Medical Society.

**RESOLUTION NO. 72-16**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Health Services)***Comprehensive Health Planning**

WHEREAS, The Kansas Medical Society needs to have knowledge of what Comprehensive Health Planning and Regional Medical Programs are accomplishing or are failing to accomplish; therefore be it

*Resolved*, That physicians on any of the area-wide planning councils for Comprehensive Health Planning or Regional Medical Programs be appointed to committees directly subordinate to the Commission on Health Services.

**RESOLUTION NO. 72-17**

REFERENCE COMMITTEE A

*(Prepared and Submitted by the  
Commission for Sociology and Economics)***HMO—HR.11728**

WHEREAS, Representative William R. Roy has distributed to the membership of the Kansas Medical Society copies of the Roy-Rogers HMO proposal, HR.11728; and

WHEREAS, The membership should understand the ramifications of such a bill; therefore be it

*Resolved*, That the Council appoint a committee to study this proposal and bring in recommendations for Society position on HR.11728; and be it further

*Resolved*, That the KMS bring these recommendations to the House of Representatives Committee which will consider the bill.

**RESOLUTION NO. 72-18**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Wyandotte County Medical Society)***Conference of County Society Officers**

WHEREAS, The AMA and the AAMSE (American Association of Medical Society Executives) sponsor yearly conferences for the executives of medical societies; and

WHEREAS, The information provided to the executives at these conferences would be extremely helpful to the officers of county medical societies; and

WHEREAS, The AMA staff involved in these conferences have advised that they would be willing to present such a program upon invitation by a state medical society; therefore be it

*Resolved*, That the Executive Committee and staff of the Kansas Medical Society be instructed to arrange a conference of county society officers for the purpose of receiving information on programs and activities of the AMA, with this conference structured similar to the Conference for Senior Medical Society Executives held in Chicago, January 27-28, 1972.

**RESOLUTION NO. 72-19**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Health Services)***Accreditation Seminar**

WHEREAS, The Joint Commission on Accreditation of Hospitals is interested in holding one-day seminars for hospital administrators and physicians; and

WHEREAS, These meetings are usually co-sponsored by the state medical society and the state hospital association; therefore be it

*Resolved*, That the House of Delegates of the Kansas Medical Society agree that the Kansas Medical Society should be a co-sponsor for such a seminar, to be held in Kansas sometime in the summer of 1972.

**RESOLUTION NO. 72-20**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Education)***AMA-ERF**

*Resolved*, That the Commission for Education ask this House to commend the doctors of Kansas and especially the Auxiliary to the Kansas Medical Society for their donations and strong support of AMA-ERF.

**RESOLUTION NO. 72-21**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Wyandotte County Medical Society)***Constitutional Convention of AMA**

WHEREAS, The AMA House of Delegates continues to be out of step with modern medical problems, and their attempts to solve these problems have been on a piecemeal basis; therefore be it

*Resolved*, That the Kansas Medical Society supports Doctor Wesley Hall's call for a Constitutional Convention of the AMA; and be it further

*Resolved*, That the AMA Delegates from Kansas be instructed to pursue this at the AMA Annual Meeting.



**RESOLUTION NO. 72-22**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Wyandotte County Medical Society)***Wage and Price Controls**

WHEREAS, The medical profession fully supports the concept of wage and price controls as an effective deterrent to inflation; and

WHEREAS, It appears that discriminatory action has been taken by the Wage and Price Commission against the medical profession; and

WHEREAS, The AMA officers and staff have been active in looking after the physicians' interests in this situation; therefore be it

*Resolved*, That the Kansas Medical Society go on record as supporting and commending the increasing activity of the AMA in representing the medical profession in this discriminatory action.

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**RESOLUTION NO. 72-23**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***The Legislative Committee**

WHEREAS, In accordance with action previously taken by the House of Delegates, the Executive Committee inaugurated a new power structure in the establishment of a Legislative Committee; therefore be it

*Resolved*, That the Legislative Committee shall consist of members selected by the larger component societies and their executive secretaries, all member physicians who are elected to the legislature, and the Executive Secretary of the Kansas Association of Family Physicians; and be it further

*Resolved*, That this committee shall be the liaison with the Kansas Legislature.

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**RESOLUTION NO. 72-24\***

REFERENCE COMMITTEE B

**Membership**

*Resolved*, That the by-laws be amended by adding 11.931: "A member must pay dues for the one year in which he became delinquent should he desire to renew his active membership in the future, unless he submits his letter of resignation to the Society by January 31."

**RESOLUTION NO. 72-25\***

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***Membership**

*Resolved*, That the by-laws be amended by adding 11.911: "A member delinquent in the payment of his dues on June 30 of that dues-paying year shall be suspended."

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**RESOLUTION NO. 72-26\***

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***Address of the President-Elect**

WHEREAS, The address of the President-Elect (optional) has been deleted from the agenda of the first session of the House; and

WHEREAS, The President-Elect takes over his duties as President immediately prior to adjournment of the second session of the Annual Session of the House of Delegates; therefore be it

*Resolved*, That page 16, Section 5.4129, be amended by inserting the following between the first and second sentences: "The President is invited to present to the House an outline of his plans for the coming year at the time he assumes office."

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**RESOLUTION NO. 72-27**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***Address of the President**

WHEREAS, The President customarily and properly is seated beside the Speaker at all sessions of the House of Delegates and is repeatedly asked for advice or information; and

WHEREAS, The President should be afforded at every session of the House of Delegates the opportunity to address the House as he may desire and upon such subjects as he may consider useful; therefore be it

*Resolved*, That no special place on the agenda be designated as the time for a report from the President, but that it be declared the wish of the House that the President be heard at such times as he may request.

**RESOLUTION NO. 72-28\***

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***A Second Annual House of Delegates Session**

WHEREAS, Events affecting the practice of medicine occur at an accelerated pace; and

WHEREAS, The position of the Society regarding such events cannot, in the interest of the public and of the profession, be delayed for periods that could be a year; and

WHEREAS, The Kansas Legislature now meets annually, with committees meeting continuously between sessions, and considers much material vital to the health of the public and to the practice of medicine; therefore be it

*Resolved*, That the By-Laws be amended on page 17 by adding a new section, 5.54, and by renumbering the present 5.54 to 5.55:

5.54 INTERIM SESSION. The House of Delegates shall meet annually, for a session of one day, on the second Sunday in November, unless the date is changed prior to October 1 by action of the Council. The place of the meeting shall be selected by the Council prior to October 1, but shall be in some city other than where the next annual session will be held.

5.541 An announcement of the interim session shall be sent to the officers, councilors, and to the secretary of each component and specialty society prior to October 1.

5.5411 The official order of business shall be:

5.5411,1 Registration and seating of delegates, Society members, and visitors.

5.5411,2 Call to order by the Speaker.

5.5411,3 Announcement of number of delegates, and the presence of an official quorum.

5.5411,4 Announcement of the appointment by the Speaker of a reference committee, or more than one if required.

5.5411,5 Introduction of resolutions previously received. It is intended that all resolutions shall be submitted to the Executive Office before November 1. Such as are received prior to November 1 will be mailed to the officers, councilors, and to secretaries of component and specialty societies in number corresponding to their delegate strength. These will be designated by a number and referred to a reference committee.

5.5411,6 It is intended that resolutions considered during the interim session shall relate principally to state or federal legislation, to business relating to state agencies or institutions, and to resolutions submitted by the Executive Committee, the Council, a commission, a specialty society, or by a component society.

5.411,7 Resolutions not received prior to November 1, or such resolutions as in the opinion of the Speaker may be delayed for action until the May meeting, can be introduced only after approval of two-thirds of those voting members present.

5.5411,8 The House is declared in recess and the chairman of the Reference Committee conducts hearings on each resolution referred to the committee.

5.5411,9 The Speaker reconvenes the House and presents for action such resolutions as the Reference Committee is ready to report. The Reference Committee will continue to meet in executive session until its work is completed.

5.5411,10 Announcements.

**RESOLUTION NO. 72-29**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***Resolutions**

WHEREAS, Every resolution would be acted upon by the House more nearly consistent with the wishes of the membership if they could be made available in the JOURNAL prior to the meeting; therefore be it

*Resolved*, That the Speaker annually notify each component society in January to prepare all possible resolutions in advance, so they may be printed in the April issue of the JOURNAL; and be it further

*Resolved*, That the President remind all delegates in his January Newsletter to the membership to have all possible resolutions prepared for publication in the April issue of the JOURNAL; and be it further

*Resolved*, That the above notwithstanding, there shall be an opportunity at the first session of each House of Delegates meeting for the introduction of resolutions not previously published.

**RESOLUTION NO. 72-30\***

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)***Reports at the First Session of the Annual Meeting of the House of Delegates**

WHEREAS, At the First Session of the Annual Meeting of the House of Delegates numerous reports are read to the House by various officers of the Society and related organizations; and

WHEREAS, Information contained in these reports is of value to the House of Delegates but, according to present custom, at the expense of considerable time; therefore be it



*Resolved*, That the by-laws be amended on page 15 and 16 by deleting Sections 5.4116 through 5.411,16; and be it further

*Resolved*, That the following be added:

5.4116 Report of the Constitutional Secretary shall be distributed to all persons in attendance. The Constitutional Secretary shall call attention of the House to any statistics relating to membership that are of exceptional importance.

5.4117 The report of the Treasurer, including a proposed budget for the coming year, shall be distributed to all persons present. The Treasurer shall call attention to any specific financial items that are exceptional. The House shall immediately thereafter act to approve the report and the budget for the coming year, or it shall act to refer the report to a Reference Committee.

5.4118 The report of the Editor of the JOURNAL shall be prepared and distributed to all persons present. This report shall be considered by a Reference Committee for any action that is needed and shall present such recommendations to the second session of the House of Delegates.

5.4119 The Speaker of the House of Delegates may invite such other persons to present written or oral reports to the House of Delegates which in his judgment will be important for consideration by the House. If presented in written form, each report shall be referred to a Reference Committee which shall consider its content and make such recommendations as may be needed to the second session of the House. If presented orally, the Speaker shall note such items as are considered necessary for action and shall refer the subject of such items to a Reference Committee for recommendations at the second session. Included here may be, as circumstances indicate, reports from the Auxiliary, the Board of Healing Arts, the Board of Health, the University of Kansas School of Medicine, or any other individual or organization as may be selected by the Speaker.

5.411,10 The report of the Executive Director shall be prepared and distributed to all persons present. A reference committee shall determine whether any items contained in this report shall receive action at the second session of the House.

5.411,11 Unfinished business.

5.411,12 Reports and presentation of resolutions from commissions.

5.411,13 New business and the introduction of resolutions from component societies, specialty societies, and delegates.

5.411,14 Announcements—to include: (1) members of each reference committee; (2) time and place of reference committee meetings; (3) names and districts of expiring councilor and alternate terms; (4) results of primary elections; (5) other.

5.411,15 Adjournment to reconvene at second meeting.

## **RESOLUTION NO. 72-31\***

REFERENCE COMMITTEE B

*(Prepared and Submitted by the  
Commission for Society Organization)*

### **The Consent Calendar**

WHEREAS, The Kansas House of Representatives has instituted a time-saving custom known as the Consent Calendar, consisting of legislation about which no debate is expected. Such items are voted on without discussion. A single objection immediately removes a bill from the Consent Calendar; and

WHEREAS, It appears this custom, with modifications, might be adapted for use during the first session of the House of Delegates; therefore be it

*Resolved*, That the by-laws be amended on page 17 by inserting a new section 5.4413:

5.4413 As each resolution is introduced, the Speaker shall designate it with a number and if, in his opinion, the resolution can be dismissed and acted upon within a reasonable amount of time, he shall direct the resolution to be placed on the Consent Calendar. He shall ask if there is any objection. If an objection appears, the resolution shall at that time be referred to a reference committee. If no objection appears, it will be placed before the House for discussion and action after all resolutions have been presented. The House may even at this time direct that the resolutions shall be referred to a reference committee.

## **RESOLUTION NO. 72-32**

REFERENCE COMMITTEE B

*(Submitted by the Legislative Committee)*

### **The Kansas Legislature**

WHEREAS, The Kansas Legislature appears to be increasingly concerned with legislation relating to health; therefore be it

*Resolved*, That the physicians in each legislative district actively support candidates to the legislature from either political party who understand health problems and who support sound legislation for the health care of the people of Kansas.

## **RESOLUTION NO. 72-33**

REFERENCE COMMITTEE B

*(Prepared and Submitted by the Drug  
Abuse Committee)*

### **Drug Abuse**

WHEREAS, The incidence of prescribing and dispensing of stimulant and depressant drugs has been drastically reduced; and



WHEREAS, A need still exists to exert even a greater effort to minimize the use of stimulant and depressant drugs; therefore be it

*Resolved*, That the Kansas Medical Society and the Kansas Pharmaceutical Association undertake a joint program to monitor both the prescribing and dispensing practices of stimulant and depressant drugs within the state.

### RESOLUTION NO. 72-34

REFERENCE COMMITTEE B

*(Prepared and Submitted by the Drug Abuse Committee)*

#### Methadone

WHEREAS, Methadone (trade name, Datophine), a medically useful narcotic, is a special problem. When used under proper medical supervision, combined with extensive rehabilitation efforts it helps many addicts stay away from heroin. Methadone has been diverted into illicit drug channels. Improper dispensing will almost certainly lead to improper distribution among fellow addicts; therefore be it,

*Resolved*, That methadone should be administered within a clinic; that the Kansas Medical Society invoke a voluntary moratorium on prescribing methadone by its members; and be it further

*Resolved*, That the Kansas Pharmaceutical Association ask its members not to honor prescriptions for methadone written by private physicians.

### RESOLUTION NO. 72-35

REFERENCE COMMITTEE B

*(Prepared and Submitted by the Drug Abuse Committee)*

#### Drug Abuse

WHEREAS, Millions of dollars have been spent and millions of hours put into drug educational programs throughout Kansas, yet drug abuse among our youth is on the increase not on the decrease; and

WHEREAS, Treatment of the narcotic addict is most difficult and present treatment programs of these addicts have yielded a cure rate of only 5-6% and this amount of actual cure comes about with extended months of treatment at a tremendous expense; and

WHEREAS, Methadone treatment is an admission of the failure of other treatments and due to the fact that methadone is a potent narcotic drug patients are not allowed this form of treatment until they have been hard-core addicts for several years, and after other treatment has failed; therefore be it

*Resolved*, That the Kansas Medical Society and the Kansas Pharmaceutical Association put a challenging

resolution directed to law enforcement—Board of Education and city commissioners to institute urine drug screening tests on all youth found disturbing peace at school, at home or on the streets; and be it further

*Resolved*, That youth found with narcotics in the urine be forced to treatment programs thus preventing spread of this disease to other youth.

### RESOLUTION NO. 72-36

REFERENCE COMMITTEE A

*(Prepared and Submitted by the Council)*

#### Kansas Foundation for Medical Care

WHEREAS, The House of Delegates on May 12, 1971 authorized the establishment of a Kansas Foundation for Medical Care but declared it would not be placed into effect until the House approved the by-laws; and

WHEREAS, The Council subsequently directed that the foundation be incorporated; and

WHEREAS, The Council and component societies amended numerous sections of the by-laws; and

WHEREAS, The incorporators met on February 13, 1972 and authorized that an application be presented to incorporate the foundation; and

WHEREAS, The foundation was incorporated by the State of Kansas on February 18, 1972; therefore be it

*Resolved*, That the House of Delegates adopt by-laws for the Kansas Foundation for Medical Care and authorize the corporation to become active.

### ARTICLES OF INCORPORATION OF KANSAS FOUNDATION FOR MEDICAL CARE

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, acting as incorporators of a corporation under the Kansas Non-Profit Corporation Act, and in accordance therewith, do hereby execute and acknowledge these Articles of Incorporation:

#### I.

The name of the corporation is KANSAS FOUNDATION FOR MEDICAL CARE.

#### II.

The period of duration of the corporation is perpetual.

#### III.

The purpose or purposes for which the corporation is organized are as follows:

A. To serve as a mechanism under which partici-

pating members of the foundation may negotiate and contract with third-party purchasers of medical care.

B. To promote and develop means whereby medical services of high quality can be provided to the general public in accordance with proper medical and ethical standards.

C. To study and promote improved methods and facilities for delivery of health care.

D. To improve the public health.

E. To study and promote improvement in the means of financing health care.

F. To promote the art and science of medicine.

G. To foster medical education.

H. To disseminate information to the general public concerning medical science and health care.

I. To work with all segments of society to expedite the accomplishments of the aforementioned goals.

These segments should include medical societies, professional organizations, labor and consumer organizations, interested individuals, educational institutions and local foundations, as well as the legislative and administrative divisions of government.

J. To receive and acquire by gift, grant, purchase, devise, bequest, or otherwise, as may be lawful, money and real and personal property of any kind; and to hold, accumulate, invest, or dispose of such property or the income derived therefrom for the furtherance of the above stated purposes.

K. To do and engage in any and all lawful activities which may be incidental or reasonably necessary to any of the foregoing purposes, and to have and to exercise all other powers and authority now or hereinafter conferred upon nonprofit corporations under the laws of the State of Kansas.

#### IV.

This corporation shall never be operated for the primary purpose of carrying on a trade or business for profit. No part of the income nor the assets of this corporation shall be distributed to its members, directors, or officers; provided, however, that reasonable compensation may be paid for any services rendered to the corporation, and reimbursement may be made for any expenses incurred for the corporation by any officer, director, member, agent, employee, or other person or corporation; and provided further that the corporation may make payments to or for the benefit of its members in payment for services performed by such members under health care plans promoted or administered by the corporation.

#### V.

The address of the initial registered office of the corporation is 1300 Topeka Avenue, City of Topeka,

County of Shawnee, Kansas 66612, and the name of its initial registered agent at such address is Oliver E. Ebel.

#### VI.

The number of directors constituting the initial Board of Directors for the purpose of incorporation shall be eleven (11), and the names and addresses of the persons who are to serve as the initial directors, until the first meeting of directors after incorporation and until their successors shall be duly elected and shall qualify, are as follows:

William J. Reals, M.D., St. Joseph Hospital, Wichita, Kansas, President

Francis T. Collins, M.D., 206 Medical Arts Bldg., Topeka, Kansas, Past President

Kenneth L. Graham, M.D., Medical Arts Bldg., Leavenworth, Kansas, President-Elect

Thomas F. Taylor, M.D., 430 S. Ohio, Salina, Kansas, First Vice President

John N. Blank, M.D., 713 Wolcott Bldg., Hutchinson, Kansas, Second Vice President

Emerson D. Yoder, M.D., Denton, Kansas, Constitutional Secretary

Chester M. Lessenden, Jr., M.D., Medical Plaza Bldg., Topeka, Kansas, Treasurer

Lucien R. Pyle, M.D., 211 Medical Arts Bldg., Topeka, Kansas, AMA Delegate

John C. Mitchell, M.D., 617 United Bldg., Salina, Kansas, AMA Delegate

Clair C. Conard, M.D., P.O. Box 1000, Dodge City, Kansas, Speaker

M. Robert Knapp, M.D., 1128 S. Clifton, Wichita, Kansas, Vice Speaker

### BY-LAWS OF KANSAS FOUNDATION FOR MEDICAL CARE

We, the Directors of the above entitled corporation, under the Kansas Non-Profit Corporation Act, hereby adopt the following by-laws for the government of said corporation, the regulation of its affairs, and the carrying on of its business.

#### ARTICLE I Membership

##### 1. *Classes of Membership*

There shall be two classes of membership in this corporation, as follows: Corporate Members and Participating Members.

In addition to the members referred to above, the Board of Directors may designate other persons who may take part in the projects to be carried out under the direction or control of the corporation, under such terms and conditions as the Board of Directors may determine.

## 2. *Corporate Members*

Corporate Members shall consist of: (a) those persons who are members of the House of Delegates of the Kansas Medical Society, a Kansas nonprofit corporation; (b) those other than doctors of medicine serving on the board of directors pursuant to the provisions of Article III, Sec. 2 of these by-laws. Every such person upon becoming a member of the House of Delegates of the Kansas Medical Society, if he accepts, shall become, without any further proceeding, a corporate member of this corporation. Each corporate member shall remain such only during the time that he is a duly qualified and acting member of the House of Delegates of Kansas Medical Society, and each such corporate member upon ceasing to be a member of said House of Delegates shall immediately and automatically and without notice, hearing, or affirmative action on the part of this corporation, lose and forfeit such corporate membership, and any and all rights, powers, or privileges pertaining thereto.

Upon becoming a corporate member, a physician shall not automatically become a participating member, but may apply for participating membership as hereinafter provided in Section 3 of this Article.

## 3. *Participating Members*

Any physician, who is authorized by the statutes of the State of Kansas to practice medicine in the State of Kansas and who is eligible for membership in the Kansas Medical Society or the Kansas State Osteopathic Association, shall be eligible to apply for election as a participating member in this corporation; provided, however, that the Board of Directors of this corporation shall have the right to refuse such application for membership, if in their sole discretion they find that such physician shall not be of good moral character, or in any other way be not qualified to practice medicine, or to have been guilty of unprofessional conduct, or of conduct unbecoming a person licensed to practice medicine and surgery, or of conduct detrimental to the best interests of the public.

## 4. *Selection and Removal of Participating Members*

Any physician (whether a corporate member or other physician) who desires to become a participating member of this corporation shall complete and file such application for that purpose as may be required by the Board of Directors. Such application shall contain a provision whereby the applicant agrees to be bound by the by-laws of the corporation and such rules and regulations as may be adopted by the corporation, and agrees to be bound by the principles of medical ethics, as interpreted by the American Medical Association and the Kansas Medical Society.

The Board of Directors shall be authorized to adopt such rules and regulations as it may deem reasonable for the processing of applications for participating membership.

## 5. *Rights, Privileges and Obligations of Participating Members*

The Board of Directors may adopt such rules and regulations as it may deem proper, not inconsistent with these by-laws, governing the rights, privileges and obligations of participating members.

The privilege of being heard at the meetings of the corporate members and at the meetings of the Board of Directors shall be granted to participating members, subject to such limitations as the corporate members or the Board of Directors respectively may determine.

Participating members shall have the privilege of holding any office in the corporation and the privilege of membership on any committee.

## 6. *Dues and Assessments*

Dues and assessments, if any, to be charged to or imposed upon the corporate or participating members of the corporation, or other persons who may take part in any project of the corporation, shall be determined by the Board of Directors.

## 7. *Voting Rights*

The right to vote shall be held by corporate members only, except as listed in paragraph 4 below, and such corporate members shall be entitled to one vote on all propositions submitted to the members.

The Board of Directors, however, may seek the advice of the participating members by submitting such questions concerning the projects of the corporation as it may deem proper to a vote of the participating members.

Cumulative voting and voting by proxy shall not be permitted.

Participating members shall have the right to vote on the adoption of any health care standards used for peer review or any uniform, average, or median fee schedules for medical services by the foundation. Adoption of such schedules shall be by a majority of those participating members present and voting.

## 8. *Interest in Property*

None of the members of this corporation shall ever have any right to or interest in any of the property, real or personal of any kind or description, which is now or may in the future be owned and controlled by the corporation.

# ARTICLE II

## Meetings of the Corporate Members

### 1. *Annual Meetings*

The annual meeting of corporate members of this



corporation shall be held on the first day of the Annual Session of the Kansas Medical Society.

## 2. *Special Meetings*

A special meeting of the corporate members of this corporation may be called at any time by the president, the Board of Directors, or by not less than one-third of such corporate members.

## 3. *Place of Meeting*

Each annual meeting of the corporate members of the corporation shall be held at the same place designated as the place of meeting for the annual session for such year of the Kansas Medical Society. The Board of Directors may designate any place, either within or without the state of Kansas, as a place of meeting for any special meeting called by the Board of Directors. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the registered office of the corporation in the State of Kansas.

## 4. *Notice of Meeting*

Written notice stating the place, day, and hour of any meeting of corporate members shall be delivered either personally or by mail to each corporate member not less than ten (10) or more than fifty (50) days before the date of such meeting, by or at the direction of the president, or the secretary, or the officers or persons calling the meeting. In case of a special meeting, the purpose or purposes for which the meeting is called shall be stated in the notice. If mailed, the notice of meeting shall be deemed to be delivered when deposited in the United States mail addressed to such corporate member at his address as it appears on the records of the corporation, with postage thereon prepaid.

## 5. *Informal Action by Corporate Members*

Any action required by law to be taken at a meeting of the corporate members, or any action which may be taken at a meeting of such members, may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by all of such members entitled to vote with respect to the subject matter thereof.

Two-thirds of the corporate members shall constitute a quorum at any such meeting. If a quorum is not present at the meeting, a majority of the corporate members present may adjourn the meeting from time to time without further notice.

## 7. *Voting*

A majority of the corporate members present and voting at a meeting at which a quorum is present shall be necessary for the adoption of any matter to be voted upon by such members, unless a greater percentage is required by law or by these by-laws.

# ARTICLE III

## Board of Directors

### 1. *General Powers*

The affairs of this corporation shall be managed by its Board of Directors.

### 2. *Number, Tenure and Qualifications*

The number of directors shall be twenty-nine (29), including the president of the Kansas Medical Society as ex-officio member, and the president of the corporation, who shall serve ex-officio with the right to vote. Initially, Districts 1 through 6 will each elect one director for a period of three (3) years; Districts 7 through 12 will each elect one director for a period of two (2) years; District 13 through 18 will each elect a director for a period of one (1) year. Thereafter, each district will elect a director for a period of three (3) years as their terms expire. The Kansas State Osteopathic Association shall elect three (3) of their members licensed to practice medicine and surgery to serve on the Board of Directors. Initially, one shall be elected to serve a three-year term, one to serve a two-year term, and one to serve a one-year term, and thereafter each person so elected shall be elected to a three-year term. The Board of Directors shall elect six (6) members at large—initially two for 1 year, two for 2 years and two for 3 years, thereafter successors shall be elected for a term of 3 years.

Each district member of the board shall be a participating physician and will be elected by the physician members of the respective Council District.

The elections of the medical society district directors will take place at the annual meeting of the corporation. Each director shall serve until his term expires or until his successor shall have been duly elected and qualified.

### 3. *Regular Meetings*

The regular annual meeting of the Board of Directors shall be held without other notice than this by-law, immediately after and at the same place as the annual meeting of the corporate members of the corporation. The Board of Directors may provide by resolution the time and place, either within or without the state of Kansas, for the holding of additional regular meetings of the board without other notices than such resolution.

### 4. *Special Meetings*

Special meetings of the Board of Directors may be called by or at the request of the president or any two directors. The person or persons authorized to call special meetings of the board may fix any place, either within or without the state of Kansas, as

the place for holding any such special meeting of the board called by them.

#### 5. *Notice*

Notice of any special meetings of the Board of Directors shall be given at least ten days previously thereto by written notice delivered personally or sent by mail or telegram to each director at his address as shown by the records of the corporation. The purpose of the special meeting shall be stated in the notice of such meeting. If mailed, such notice shall be deemed to be delivered when deposited in the United States mail in a sealed envelope so addressed, with postage thereon prepaid. If notice be given by telegram, such notice shall be deemed to be delivered when the telegram is delivered to the telegraph company. The attendance of a director at any meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at nor the purpose of any regular or special meeting of the board need be specified in the notice or waiver of notice of such meeting, unless specifically required by law or by these by-laws.

#### 6. *Quorum*

A majority of the Board of Directors shall constitute a quorum for the transaction of business at any meeting of the board; but if less than a majority of the directors are present at said meeting, a majority of the directors present may adjourn the meeting from time to time without further notice.

#### 7. *Voting*

The act of a majority of the directors present and voting at a meeting at which a quorum is present shall be the act of the Board of Directors, unless the act of a greater number is required by law or by these by-laws.

#### 8. *Vacancies*

Any vacancy occurring in the Board of Directors shall be filled by election from the original electing body of that director. A director elected to fill a vacancy shall be elected for the unexpired term of his predecessor in office.

#### 9. *Compensation*

Directors as such shall not receive any stated salaries for their services, but by resolution of the Board of Directors reasonable compensation and expenses of attendance, if any, may be allowed for attendance at regular or special meetings of the board; but nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity and receiving compensation therefor.

#### 10. *Informal Action by Director*

Any action required by law to be taken at a meeting of directors, or any action which may be taken at a meeting of directors, may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by all of the directors.

#### 11. *Removal of Directors*

Any director may be removed from office as such by the affirmative vote of two-thirds of the members, at any annual or special meeting of the members, on written notice setting forth the reasons and grounds therefor, mailed to such director at his last known address at least ten (10) days prior to the date of such meeting.

### ARTICLE IV Officers

#### 1. *Officers*

The officers of the corporation shall be a president, a vice-president, a secretary, and a treasurer, elected by the Board of Directors from the current membership of the board.

One or more project directors may be appointed in accordance with the provisions of this article.

Only members of the Board of Directors who are participating members of this corporation shall be eligible for election to any office of this corporation.

The Board of Directors may elect or appoint such other officers, including one or more assistant secretaries, and one or more assistant treasurers, as it shall deem desirable, such officers to have the authority and perform the duties prescribed from time to time by the Board of Directors.

#### 2. *Election and Term of Office*

The officers of the corporation shall be elected annually by the Board of Directors at the regular annual meeting of the Board of Directors. If the election of officers shall not be held at such meeting, such election shall be held as soon thereafter as conveniently may be. New offices may be created and filled at any meeting of the Board of Directors. Each officer shall hold office until his successor shall have been duly elected and qualified.

#### 3. *Removal*

Any officer elected or appointed by the Board of Directors may be removed at any time, with or without cause, by the Board of Directors whenever in its judgment the best interests of the corporation would be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the officer so removed.

#### 4. *Vacancies*

Any vacancy in any office because of death, resignation, removal disqualification, or otherwise may



be filled by the Board of Directors for the unexpired portion of the term.

#### 5. *President*

The president shall be the executive head of the corporation, and shall have general supervision over the business and affairs of the corporation. He shall preside at all meetings of the members and of the Board of Directors.

#### 6. *Vice President*

In the absence of the president or in the event of his inability or refusal to act, the vice president shall perform the duties of the president, and when so acting shall have all powers of and be subject to all the restrictions upon the president. The vice president shall perform such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

#### 7. *Treasurer*

If required by the Board of Directors, the treasurer shall give a bond for the faithful discharge of his duties in such sum and with such surety or sureties as the Board of Directors shall determine. He shall have charge and custody of and be responsible for all funds and securities of the corporation; receive and give receipts for moneys due and payable to the corporation from any source whatsoever, and deposit all such moneys in the name of the corporation in such banks, trust companies, or other depositories as shall be selected in accordance with the provisions of these by-laws; and in general perform all the duties incident to the office of treasurer and such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

#### 8. *Secretary*

The secretary shall keep the minutes of the meetings of the members and of the Board of Directors in one or more books provided for that purpose; see that all notices are duly given in accordance with the provisions of these by-laws or as required by law; be custodian of the corporate records and of the seal of the corporation and see that the seal of the corporation is affixed to all documents, the execution of which on behalf of the corporation under its seal is duly authorized in accordance with the provisions of these by-laws; keep a register of the post office address of each member which shall be furnished to the secretary by such member; and in general perform all duties incident to the office of secretary and such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

#### 9. *Executive Director*

The office of executive director shall be filled by the person who holds the office of executive direc-

tor of the Kansas Medical Society. Subject to the control of the president and of the Board of Directors, he shall in general supervise and administer the business and affairs of the corporation. Assistants to the executive director may be selected by the Board of Directors as is deemed necessary to further the activities of the foundation.

#### 10. *Project Director*

Any project director shall serve under the general supervision and direction of the executive director. He shall supervise the administration of such projects as may be assigned to him, and shall perform such other duties as may be delegated to him by the Board of Directors, the president, or the executive director.

#### 11. *Assistant Treasurers and Assistant Secretaries*

If required by the Board of Directors, the assistant treasurers shall give bonds for the faithful discharge of their duties in such sums and with such sureties as the Board of Directors shall determine. The assistant treasurers and assistant secretaries in general shall perform such duties as shall be assigned to them by the treasurer, or the secretary, or by the president, or the Board of Directors.

### ARTICLE V Committees

#### 1. *Committees of Directors*

There shall be an Executive Committee, which shall include the president, and such other officers or members of the Board of Directors as may be designated by the Board of Directors. The Board of Directors may delegate to such Executive Committee any of the powers of the Board of Directors when the Board of Directors is not in session, provided, however, that such delegation of authority to the Executive Committee shall not operate to relieve the Board of Directors, or any individual director, of any responsibility imposed upon it or him by law.

#### 2. *Other Committees*

Other committees not having and exercising the authority of the Board of Directors in the management of the corporation may be appointed in any such manner as may be designated by a resolution adopted by a majority of the directors present at a meeting at which a quorum is present. Unless otherwise provided in such resolution, members of such committees may be persons who are not members of the Board of Directors.

#### 3. *Term of Office*

The tenure of members of such committees shall be as provided by the Board of Directors in the resolution creating such committee.



#### 4. *Quorum*

Unless otherwise provided in the resolution of the Board of Directors designating a committee, a majority of the whole committee shall constitute a quorum, and the act of a majority of the numbers present at a meeting at which a quorum is present shall be the act of the committee.

#### 5. *Rules*

Each committee may adopt rules for its own government not inconsistent with these by-laws, or with rules adopted by the Board of Directors.

### ARTICLE VI

#### Execution of Instruments

##### 1. *Execution of Instruments*

The president shall have power to execute on behalf and in the name of the corporation any deed, contract, bond, debenture, note, or other obligations or evidences of indebtedness, or proxy, or other instrument requiring the signature of an officer of the corporation, except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the corporation. Unless so authorized, no officer, agent or employee shall have any power or authority to bind the corporation in any way, to pledge its credit, or to render it liable pecuniarily for any purpose or in any amount.

##### 2. *Checks and Endorsements*

All checks and drafts upon the funds to the credit of the corporation in any of its depositories shall be signed by such of its officers or agents as shall from time to time be determined by resolution of the Board of Directors, which may provide for the use of facsimile signatures under specified conditions, and all notes, bills receivable, trade acceptances, drafts, and other evidences of indebtedness payable to the corporation shall, for the purpose of deposit, discount or collection, be endorsed by such officers or agents of the corporation, or in such manner as shall from time to time be determined by resolution of the Board of Directors. In the absence of such determination by the Board of Directors such instruments shall be signed by the treasurer, or an assistant treasurer, and countersigned by the president, or a vice president of the corporation.

##### 3. *Deposits*

All funds of the corporation shall be deposited from time to time to the credit of the corporation in such banks, trust companies, or other depositories as the Board of Directors may select.

##### 4. *Gifts*

The Board of Directors may accept on behalf of the corporation any contribution, gift, bequest, or

devise for the general purposes or for any special purpose of the corporation.

### ARTICLE VII

#### Books and Records

The corporation shall keep correct and complete books and records of account and shall also keep minutes of the proceedings of its members, Board of Directors, and committees having any of the authority of the Board of Directors, and shall keep at its registered or principal office a record giving the names and addresses of the members entitled to vote. All books and records of the corporation may be inspected by any member for any proper purpose at any reasonable time.

### ARTICLE VIII

#### Fiscal Year

The fiscal year of the corporation shall begin on the first day of . . . . ., and end on the last day of . . . . . in each year.

### ARTICLE IX

#### Corporate Seal

The corporate seal shall be in such form as shall be approved by resolution of the Board of Directors. Said seal may be used by causing it or a facsimile thereof to be impressed, or affixed, or reproduced, or otherwise. The impression of the seal may be made and attested by either the secretary or an assistant secretary for the authentication of contracts or other papers requiring the seal.

### ARTICLE X

#### Waiver of Notice

Whenever any notice is required to be given to any member or director of this corporation under the provisions of the Kansas Non-Profit Corporation Act, or under the provisions of the Articles of Incorporation, or by the by-laws of the corporation, a waiver thereof in writing signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice.

### ARTICLE XI

#### Amendments to the By-laws

These by-laws may be amended at any annual meeting of the corporate members, or at any special meeting of the corporate members called for that purpose. These by-laws may also be amended by the Board of Directors, by a vote of two-thirds of the total number of such directors, subject to the approval of the corporate membership. The corporate members shall have the right to amend or repeal any by-law change made by the Board of Directors.

## ARTICLE XII

### Disciplinary Action

A member of this corporation who is guilty of a criminal offense or gross misconduct, either as a physician or as a citizen, or violates any of the provisions of the Principles of Medical Ethics of the American Medical Association, or any Principles of Professional Conduct of the Kansas Medical Society, or any principles of conduct adopted by this corporation, or who willfully or repeatedly violates any of the professional economic or health care standards adopted by this corporation, or who acts contrary to or in violation of any contracts, agreements, or statements of principle of this corporation, shall be liable to censure, suspension, or expulsion. The procedure to be followed by this corporation with respect to censure, suspension, or expulsion of a member shall be the procedure now or hereafter contained or provided in the by-laws of the appropriate professional association.

## RESOLUTION NO. 72-37

### REFERENCE COMMITTEE A

*(Prepared and Submitted by the Committee on Peer Review)*

### Peer Review Guidelines

WHEREAS, The Kansas Foundation for Medical Care will perform peer review as its principal activity; and

WHEREAS, The House of Delegates on May 12, 1971 directed the Committee on Peer Review to prepare guidelines on this subject; and

WHEREAS, The following guidelines are recommended by this committee; therefore be it

*Resolved*, That the House of Delegates establish guidelines for the operation of a peer review program in Kansas.

## PEER REVIEW GUIDELINES

### Definition of Terms

The following terms, when used in the body of these suggested guidelines, are to be interpreted according to the definitions that follow.

1. *Claims Review*: A review of individual charges submitted for payment.

2. *Utilization Review*: A study of the frequency of charges or services to determine patterns of service of charges.

3. *Medical Audit*: An analysis, or audit, of the medical care given a patient or patients at a particular time in a particular setting, implying a retrospective review of records to determine if the essentials of care are documented. This mechanism at times may include a value judgment as to the quality of care given.

4. *Peer*: An active practicing physician reviewing another active practicing physician of like training, experience and present status.

5. *Peer Review*: A review of the quality of care provided a patient including documentation of care (medical audit), diagnostic steps used, conclusions reached, therapy given, appropriateness of utilization (utilization review), and reasonableness of charges (claims review). Peer Review is synonymous with quality.

6. *Practicing Physicians*: Those physicians who are actually seeing and treating patients.

7. *Usual, Customary, Reasonable*:

*Usual*: The "usual" fee which is charged for a given service by an individual physician in his personal practice.

*Customary*: That range of usual fees charged by physicians of similar training and experience for the same service within a given specific limited geographic or socio-economic area.

*Reasonable*: A fee which meets the above two criteria, or, in the opinion of the responsible local medical association's review committee, is justifiable in the special circumstances of the particular case in question.

### I. Preamble

Peer Review evaluates the quality and the quantity of an individual physician's professional service, including ambulatory or out-of-institution service, comparing this with that provided by other practicing physicians in the area. Peer Review should have educational value for the physician to assist him in his effort to provide care of the highest quality. It also should serve to educate the public to improve their understanding for the value of services and their true cost. Peer Review should be conducted by practicing physicians in their own geographic area with consultation as hereafter described. It should further serve to establish public confidence in the fact that the medical profession wants the patient to receive the optimum amount of care needed for his condition, and to maintain high quality, regardless of who assumes responsibility for payment.

## II. Purpose

Peer Review Committees may review specific cases brought before them by physicians, patients, institutions, prepayment carriers, insurance carriers, government agencies, or other responsible sources.

The committees will provide recommendations and advice, or attempt to resolve disputes by arbitration. Their objective will be to maintain high quality of care, aid in the control of the cost of medical care, and to keep utilization of services and facilities consistent with accepted standards of practice.

## III. Organization and Function

*A. State Peer Review Committee.* The Kansas Medical Society will establish a state peer review committee consisting of physicians representing the approved specialty societies. The function of the state peer review committee shall include at least the following:

1. The development of recommended guidelines for the use of district review committees.
2. To encourage district peer review committees to conduct their activities in accordance with the suggested guidelines.
3. Encourage approved specialty societies to form peer review advisory committees from whom peer review committees may receive expert opinion as requested.
4. To distribute information to the district committees concerning peer review activity as may be of assistance to them in the performance of their task.
5. To review and act upon cases which may be submitted by district peer review committees or those submitted through the appeal process.
6. Periodically report through the proper commission to the Council and to the House of Delegates upon the work being conducted by the district and the state peer review committee.

*B. District Peer Review Committees.* The Council is responsible for the formation of a peer review committee within his district. It should consist of representatives selected by the component societies within the Council District. The committee should have access to counsel from the specialty societies, which have authorized representation in the House of Delegates.

The District Peer Review Committee will establish close cooperation with the grievance committees of the component societies within the Council District and such other committees as may be appropriate. Representatives of these committees may also be members of the Peer Review Committee.

## IV. Scope of Peer Review (State and District)

- A. To assure high standard of professional care.
- B. To review records and other pertinent information for the purpose of recommending appropriate action.
- C. To review and evaluate practice patterns so that specific educational activities can be instituted to modify such patterns when they appear inadequate.
- D. To promptly refer to the component medical society for whatever action such society considers appropriate evidence of unwillingness on the part of a physician to accept recommendations made by the Peer Review Committee.
- E. To cooperate with the component societies in an effort to inform the public regarding the existence and purpose of peer review committees.

## V. Review Procedure (State and District)

### *A. Conditions Prerequisite for Review.*

1. Sufficient evidence to indicate an attempt was made to settle the dispute directly with all parties involved. Cases in litigation will not be considered.
2. Usual, customary, and reasonable fees will be used as a guideline in cases involving fee disputes.
3. The committee will review cases only after it has received such information as it considers necessary. The committee may request additional information or conduct its own preliminary investigation before accepting the case for review. The committee may develop such forms as are considered necessary to obtain needed information.
4. To adopt procedures and policies, with appropriate records to process complaints and to notify complainants about disposition of their cases.

### *B. Review Process.*

The operation of the Peer Review Committee can be effective only if its decisions are honored by organizations and individuals who request the committee's services.

1. Upon reviewing a properly documented case, the chairman should promptly notify all interested parties that the case is scheduled for hearing. If appropriate, the interested parties may be invited to attend the hearing.
2. The committee should attempt to reach a decision on all cases within ninety (90) days. If the District Committee cannot reach a decision or does not desire to hear the case, it has the obligation of referring the case to the State Peer Review Committee. All interested parties should be promptly notified of decisions reached.



3. The right of appeal is inherent to any decision of local or district peer review.

4. In the event of an appealed decision, the District Chairman should immediately submit the case to the State Peer Review Committee together with all appropriate documentation.

## VI. Disciplinary Jurisdiction

The Peer Review Committee is not a disciplinary body. It does, however, have an obligation to report its findings and make recommendations to other appropriate county, district, or state committees requesting the latter take action when warranted by the circumstances. The final decision and action rests with the Council of the Kansas Medical Society.

## VII. Responsibility of Peer Review Committees (State and District)

*A. State Peer Review Committee:* Those defined under III.A.

*B. District Peer Review Committee:*

1. Perform services delineated in Section IV.

2. Avoid interference with established hospital or ECF peer review committees, but work in close harmony with them.

3. May assume the responsibility for utilization review in addition to peer review if requested to do so by the medical staff of the institution involved.

*C. Composition and Tenure of the Committee:*

1. The committee should consist of a chairman and at least two (2) or more members and be broadly representative of the medical community.

2. Where possible, terms of service should be staggered to insure continuity.

*D. Committee Availability:* The committee should accept referrals from all sources such as the patient, physician, prepayment groups, insurance carriers, and governmental agencies.

*E. Public Information:* Committees should keep their component medical societies regularly informed of their activities. The component societies will be responsible for dissemination of this information to their members and to the public.

*F. Priorities:*

1. Peer Review of quality of practice: a. professional competency, b. under-utilization, c. over-utilization.

2. Unusual charges.

3. Suspected fraudulent claims (the committee will generally submit the information to the component society for action).

*G. Liaison With Other Agencies:* The Peer Review Committee may invite the involved parties. At its discretion, the committee may request consultation with other informed sources.

*H. Right of Appeal Mechanism:* It is the Peer Review Committee's responsibility to obtain the facts and make recommendations based upon the findings. In the event of disagreement, appeals are available according to local district guidelines. Refer to III.A.5; V.3; and VI.

*I. Records:* The committee should adopt formal written procedures and policies with special forms to record and process complaints and to notify the parties concerned about the disposition of their cases. Refer to V.A.3 and V.A.4.

*J. Liaison With Hospitals:* Close cooperation with the chairman of appropriate hospital medical staff committees is essential.

*K. Financing:* Financing of the committees' work and establishing charges for their efforts should be locally arranged. Assessing charges against the patient or the physician would establish an unfair financial burden. However, insurance carriers, governmental agencies, and other individuals or agencies requesting an unusual amount of investigation and review should be expected to pay a reasonable fee for services rendered.

## VIII. Revisions

It is recognized this document will require occasional revision. The Commission for Sociology and Economics is responsible for periodic revisions.

**114th Annual Meeting**

**Kansas Medical Society**

**Broadview Hotel**

**Wichita**

**May 6-9, 1973**

***Watch for further announcements***

## Screens for Peer Review Program

(Continued from page 176)

### 2. Cataract

#### *Frequency of Visits*

Diagnostic exam, four visits or less annually; post-operative period, eight visits or less; then revert to preoperative schedule, four visits or less annually.

#### *Criteria for Work-Up*

History (recommended)—Specific reference to previous visual acuity in affected eye, ocular injury or disease, systemic disease, hereditary disease.

Physical examination (recommended)—Specific reference to best corrected vision in each eye, ocular tension, slit lamp examination, external examination, fundusoscopic examination, refraction.

Physical examination (optional)—Lacrimal irrigation and/or probe, light projection, visual field, gonioscopy, contact lens fitting.

#### *Criteria for Treatment*

Corrective lenses (spectacles or contact lenses) for best vision.

#### *Duration*

Chronic.

#### *Comments*

Rapid subjective decrease in vision or coexistent disease may indicate more frequent visits.

### 3. Refractions

## ORTHOPEDICS AND PHYSICAL MEDICINE

### 1. Synovitis, Bursitis, Tenosynovitis

#### *Visits*

Office, hospital outpatient.

#### *Frequency of Visits*

Daily for two to four visits, then, depending on response, up to once a week.

#### *Criteria for Work-Up*

CBC, sedimentation rate, uric acid, R.A. test, urine, x-ray of affected joint or extremity, mechanical support.

#### *Criteria for Treatment*

Analgesics, sedatives, tranquilizers, physiotherapy, steroids, mechanical support, drug management, x-ray therapy.

#### *Duration*

Continuous or episodic.

### 2. Neoplasm

#### *Visits*

Office, outpatient, or inpatient.

#### *Frequency of Visits*

Depends on ultimate diagnosis.

#### *Criteria for Work-Up*

X-ray for diagnosis as indicated; clinical lab tests as indicated; pathological lab examinations.

#### *Criteria for Treatment*

Surgical biopsy and/or excision depending upon type and location of lesion—in hospital.

#### *Duration*

Dependent upon type and location of lesions.

#### *Comments*

Orthopedic practice and viewpoint.

### 3. Cervical Trauma (Whiplash Injury, Cervical Sprain or Strain, Traumatic Radiculitis, and Cervical Disc Herniation)

#### *Visits*

Home or office.

#### *Frequency of Visits*

Initial complete neurological history and examination. One to two times per week for one to three months and two times per month thereafter.

#### *Criteria for Work-Up*

X-ray cervical spine, electroencephalograms, electromyograms, psychological testing.

#### *Criteria for Treatment*

Symptomatic, physical therapy, nerve blocks, medication, and psychotherapy.

#### *Duration*

Indefinite.

### 4. Sprains and Strains (Including Back—Lumbosacral)

#### *Visits*

Office, home.

#### *Frequency of Visits*

Initial consultations, one to two times per week for first week, then once weekly for four weeks, then one time a month for six months.

#### *Duration*

Depends on severity and complications.

## PEDIATRICS

### 1. Diabetes Mellitus

#### *Visits*

Office. Hospitalization for all new diabetics.

#### *Frequency of Visits*

Three visits during the first week, then once a week for a month, then up to once a month. One visit allowed for insulin instruction.

*Criteria for Work-Up*

CBC, urinalysis, postprandial blood sugar, fasting blood sugar, often an EKG, glucose tolerance test, x-ray—on a yearly basis, there should be a chest x-ray (for TB), and an eye exam (always the eye exam on Acetone-prone).

*Criteria for Treatment*

Insulin, anti-diabetic oral agents, and diet.

*Duration*

Lifetime.

*Comments*

This disease will be treated in two different ways, depending upon whether it is Acetone-prone or Acetone-resistant. It is recommended that this distinction be made as part of the diagnosis.

## 2. Congenital Heart Disease, Rheumatic Heart Disease

*Visits*

Office.

*Frequency of Visits*

Monthly to once yearly.

*Criteria for Work-Up*

ECG, ASO, CRP, sedimentation rate, hemoglobin, hematocrit, x-ray—chest, cardiac fluoroscopy.

*Criteria for Treatment*

Proph. penicillin, steroid or aspirin, digitalis, diuretics.

*Duration*

Indeterminate.

## 3. Acute Upper Respiratory Infection in the Absence of a Complicating Factor

*Visits*

Either home or office, preferably office.

*Frequency of Visits*

Two to four visits, or one and a phone call—three to four days apart.

*Criteria for Work-Up*

WBC and differential may be indicated. Culture may be indicated. Chest x-ray when complications are present.

*Criteria for Treatment*

Antipyretics, analgesics, sedatives, antitussives, expectorants, antihistamines, and chemotherapy.

*Duration*

Seven to 14 days.

## PROCTOLOGY

### 1. Rectal Bleeding

*Visits*

Office—Diagnostic; follow-up.

*Frequency of Visits*

Procto plus history plus physical; following special x-ray studies, e.g. barium enema; treatment of bleeding internal hemorrhoids or polyp or proctitis; medical or hematologic consult if indicated.

*Criteria for Work-Up*

Barium enema; air-contrast when indicated; string test; stool guaiac; complete bleeding plus clotting profile; special x-rays—angiogram; biopsy of colonic mucosa.

*Duration*

Depends on diagnosis.

### 2. Perirectal Abscess

*Visits*

Two office visits.

*Frequency of Visits*

Initial visit—Drain abscess; second visit—Complete examination of ano-rectum with procto; further visit if further trouble.

*Criteria for Work-Up*

Barium enema and small bowel series if inflammatory disease of the bowel indicated; blood sugar if diabetes suspected.

*Criteria for Treatment*

Drainage under local anesthetic at initial visit; diagnostic proctoscopic examination plus careful exam of the ano-rectum for fistula in ano—ten days later.

*Duration*

Two weeks.

## PSYCHIATRY

### 1. Behavior Disorders of Childhood and Adolescence (Hyperkinetic, Withdrawing, Overanxious, Runaway, Unsocialized, Aggressive and Group Delinquent)

*Visits*

Office and home.

*Frequency of Visits*

Highly individualized indications requiring routine review.

*Duration*

Variable.



## 2. Neuroses (Anxiety Neuroses, Hysteria Phobia, Obsessive, Compulsive, Depressive Neurasthenic, Depersonalization, Hypochondriacal Neuroses, and Other Neuroses)

### *Visits*

Office.

### *Frequency of Visits*

Ordinarily outpatient visits as frequently as three times a week for six to twelve months.

### *Duration*

Six to 12 months.

### *Comments*

Occasionally daily visits for a short while are needed.

## 3. Alcoholism and Drug Dependence

### *Visits*

Office.

### *Frequency of Visits*

Up to one outpatient visit per week.

### *Duration*

Indefinite.

### *Comments*

Usually treated by Alcoholics Anonymous or similar group therapies.

## 4. Psychophysiologic Disorders (Skin, Musculoskeletal, Respiratory, Cardiovascular, Hemic and Lymphatic, Gastrointestinal, Genitourinary, Endocrine, Organs of Special Sense, Other)

### *Visits*

Office and home.

### *Frequency of Visits*

As needed. They are not often treated by psychiatrists. If so, treatment is usually long term and intensive—up to three visits per week.

### *Duration*

Depends upon individual case.

### *Comments*

These patients are most often treated supportively and symptomatically by internists, generalists; other nonpsychiatrists.

## UROLOGY

### 1. Urethral Stricture—Male

#### *Visits*

Office or emergency room, no home.

#### *Frequency of Visits*

As required to maintain stable calibre of urethra, as often as once per month after initial course of dilations.

#### *Criteria for Work-Up*

1. Urinalysis: Complete initial visit.
2. Stained Sediment: Complete initial visit.
3. Culture and Sensitivity and TBC: Initial visit.
4. Urethral/vaginal smears and culture when indicated.
5. Prostate smear and culture when indicated.
6. Usually no chemistries unless patient is diabetic or uremic.
7. IVP and cystograms.
8. Special: Cystoscopy.
9. Urinalysis: Stained sediment—culture and sensitivity as indicated by patient course.
10. Special procedures, i.e., dilations, prostatic massage, urethral instillations, irrigations, etc., as indicated by diagnosis.

#### *Criteria for Treatment*

Institution of antibiotic or chemotherapy as indicated by numbers one-ten above.

#### *Duration*

"Once a stricture always a stricture." Lifetime follow-up.

#### *Comments*

Strictures not responding to conservative office dilation will require hospitalization for injection, internal urethrotomy, reconstructive procedures, etc.

### 2. Fertility Survey

#### *Visits*

Office.

#### *Frequency of Visits*

Initial plus one (see comment).

#### *Criteria for Work-Up*

Urinalysis, CBC, prostatic smear, PBI, VDRL, seminal fluid study, buccal smear.

#### *Criteria for Treatment*

Institution of medical therapy as indicated by survey.

#### *Duration*

One year.

#### *Comments*

Number of visits will be influenced by presence of other urological problems and/or response to therapy of the seminal fluid study. Hospitalization may be required for testicular biopsy, vasogram, vesiculogram, etc.

### 3. Urinary Tract Infection

#### *Visits*

Office.

#### *Frequency of Visits*

Five to seven day intervals until resolution of process. Frequency and number of visits could be increased by complications.

#### *Criteria for Work-Up*

1. Urinalysis: Complete initial visit.
2. Stained Sediment: Complete initial visit.
3. Culture and Sensitivity and TBC: Initial visit.
4. Urethral/vaginal smears and culture when indicated.
5. Prostate smear and culture when indicated.
6. Usually no chemistries unless patient is diabetic or uremic.
7. IVP and cystograms.
8. Special: Cystoscopy.
9. Urinalysis: Stained sediment—culture and sensitivity as indicated by patient course.
10. Special procedures, i.e., dilations, prostatic massage, urethral instillations, irrigations, etc., as indicated by diagnosis.

#### *Criteria for Treatment*

Institution of antibiotic or chemotherapy as indicated by numbers one-ten above.

#### *Duration*

See above.

#### *Comments*

Urinary tract infection not responding to appropriate office treatment will be admitted under I.C.D.A. M 600.0-600.9, 605, 609.0, 611.

### 4. Catheter Change (For Nephrostomy, Cystostomy, Urethral Catheter)

#### *Visits*

Office-outpatient department, nursing home extended care center, house visit in special circumstances only.

#### *Frequency of Visits*

Varies with diagnosis but generally once each month.

#### *Criteria for Work-Up*

Complete urinalysis, culture and sensitivity study KUB, periodic IVP.

#### *Criteria for Treatment*

Catheter replaced new sterile catheter (materials) and new sterile collecting tubing and/or devices.

#### *Duration*

Dependent on diagnosis.

#### *Comments*

Service of physician and supplies for catheter change will be itemized.

## Section III. In-Patient Care Screens

### MEDICINE

#### 1. Pneumonia

##### *Indications for Admission*

1. Proven or suspected pneumonia.

##### *Probable Length of Stay*

1. Uncomplicated, under ten days.
2. Discharge, afebrile one to two days.

##### *Complications That May Extend Length of Stay*

1. Pleural fluid.
2. Empyema.
3. Meningitis.
4. Alcoholism.
5. Heart disease.
6. Diabetes mellitus.
7. Chronic lung disease with impaired pulmonary reserve (emphysema, chronic bronchitis, bronchiectasis, etc.).
8. Chronic renal disease.
9. Malignancy or debility.
10. Lung abscess.
11. Delayed resolution.
12. Septic arthritis.
13. Thromboembolism.
14. Atelectasis.
15. Pneumothorax.
16. Pain.

##### *Indications for Discharge*

1. Afebrile 24-48 hours.
2. Clinical improvement.

##### *Services Recommended*

1. Work-Up:

a. History: Character of sputum; pain in chest; duration and degree of fever; previous episodes and social history; contact history.

b. Physical: Breath sounds, character, presence or absence of; friction rub; rales; chest movements; percussion; cyanosis; vital signs—temperature, pulse, respiration, blood pressure; character of respiration.

c. Laboratory: CBC; blood culture in seriously ill patient (temperature of or over 104°, cyanosis needs oxygen); sputum or throat culture with sensitivities; gram stain of sputum.

d. Laboratory Consistent With Diagnosis: Sputum culture with sensitivities as indicated; F.B.S.; B.U.N.; carbon dioxide combining power; cold agglutinins; cytologic studies on sputum; acid fast smear and culture—sputum or gastric content; histoplasmin complement fixation.

- e. X-Ray: PA chest.
- f. X-Ray Consistent With Diagnosis: Upon discharge, PA and lateral of chest; progress film.
- 2. Treatment:
  - a. Appropriate antibiotics.

*Indications for Transfer to Extended Care Facility*  
Social only.

## 2. Myocardial Infarction

*Indications for Admission*

- 1. Suspicion of diagnosis.

*Probable Length of Stay*

- 1. The minimum length of stay of 21 days should begin after control of any or all early complications.
- 2. Late complications will prolong stay beyond 21 days by the length of time required to control them.
- 3. An extension of the original infarction or a second myocardial infarction may require the minimum 21 day hospitalization period as of their occurrence.

*Complications That May Extend Length of Stay*

- 1. Early complications:
  - a. Shock.
  - b. Coronary pain of unusually long duration.
  - c. Cardiac failure.
  - d. Other heart disease.
  - e. Serious arrhythmias.
  - f. Unusually large infarction (by ECG or enzymes).
  - g. Extension of infarction.
  - h. Embolism—systemic or pulmonary.
  - i. Perforated interventricular septum.
  - j. Ruptured chorda tendinea.
  - k. Ruptured papillary muscle.
- 2. Late complications (beyond first week of illness):
  - a. Cardiac failure.
  - b. Serious arrhythmias.
  - c. Embolism.
  - d. Recurrence of coronary pain suggesting impending infarction.
  - e. Persistent tachycardia.
  - f. Difficulty in regulation of anticoagulant therapy (if prothrombin time profoundly prolonged or inadequately prolonged).
  - g. Pericarditis (treat as early complication).
- 3. Other important disease.

*Indications for Discharge*

- 1. Normal or stable pulse and normal temperature.
- 2. Freedom from pain except perhaps occasional mild angina pectoris.

3. Ambulant unless transferred to other bed rest facility.

4. If all above criteria are met and home facilities for convalescence are adequate, discharge 18 days from completion of infarction may be permitted.

5. Stable and free of complications when diagnosis has been ruled out.

*Services Recommended*

- 1. Work-Up:

- a. History: Specific reference to character, onset, radiation, and duration of pain. Dyspnea, vomiting, sweating, weakness, syncope, leg pains, hemoptysis or dependent edema. Previous history of angina, myocardial infarction, hypertension or diabetes. Cerebrovascular insufficiency or intermittent claudication.

- b. Physical Examination: Specific reference to signs of shock (pallor, apprehension, restlessness, pulse rate, sweating, cyanosis, tachypnea). Blood pressure (both arms). Heart: Size, rhythm and rate, sounds, murmur or friction rub. Lungs: Type and distribution of rales, friction rub, breath sounds. Abdomen: Liver edge, spleen size, pulsation of abdominal aorta, femoral pulses. Carotid artery pulsation or bruit and jugular vein distention. Calf tenderness and/or edema.

- c. Laboratory: CBC; urinalysis; ECG on admission and prior to discharge; serum enzymes.

- d. Laboratory Consistent With Diagnosis: Blood sugar two hour p.p. prothrombin or clotting time, serum lipids, serum electrolytes.

- e. X-Ray: Basic chest.

- f. X-Ray Consistent With Diagnosis: Upper gastrointestinal and gallbladder x-rays only in establishing the diagnosis—contraindicated in established acute myocardial infarction.

- 2. Treatment:

- a. Special Procedures: Cardiac monitoring.

- b. Special Procedures Consistent With Diagnosis—Cardioversion, pacemaker, IV fluids, antiarrhythmic drugs, anticoagulants, rest, narcotics, and sedatives, diuretics and/or digitalis, electrolytes vasopressors.

*Indications for Transfer to Extended Care Facility*

Same as indications with home situation inadequate to care for needs; subject to weekly review while in extended care facility.

## 3. Recent Cerebral Infarction or Hemorrhage

*Indications for Admission*

- 1. Recent cerebrovascular accident within past 14 days.

*Probable Length of Stay*

- 1. With minimal neurologic deficit—discharge



when self-sufficient in activities of daily living.

2. With moderate neurologic deficit—when patient is conscious and able to cooperate in a rehabilitation program—either transfer to rehabilitation unit or home program to continue program.

3. Profound neurologic deficit—discharge when care at home or in chronic nursing facility matches care in the hospital or *no improvement in a four-week period*.

#### *Complications That May Extend Length of Stay*

1. Recurrent cerebral infarction or hemorrhage.
2. Infection.
3. Decubitus ulcer.
4. Prolonged unconsciousness.
5. Other significant medical condition.

#### *Indications for Discharge*

1. With Minimal Neurologic Deficit: Discharge when self-sufficient in activities of daily living.

2. With Moderate Neurologic Deficit: When patient is conscious and able to cooperate in a rehabilitation program; either transfer to rehabilitation unit or home program to continue program.

3. Profound Neurologic Deficit: Discharge when care at home or in chronic nursing facility matches care in the hospital or *no improvement in a four-week period*.

#### *Services Recommended*

##### 1. Work-Up:

a. History: Specific reference to mode of onset: Initial symptoms; duration of symptoms and signs; relations to activity and position; course and progression; state of consciousness; sensory, motor, special sense loss or coordination loss or seizures (mentation, speech, handedness); predisposing factors (diabetes, hypertension, heart disease, or antihypertensive drugs, hypoglycemia, spontaneous hypotension and hypothyroidism); family history; previous episodes.

b. Physical Examination: Specific reference to general: Blood pressure, both arms; pulse-rate and rhythm, and character of vessel wall bilaterally; carotid palpation and auscultation of vessels; cardiac evaluation; neurologic; sensory, motor (including coordination), cranial nerves and reflexes and state of consciousness; speech, neck rigidity.

c. Laboratory: CBC; urinalysis; blood sugar.

d. Laboratory Consistent With Diagnosis: Glucose tolerance test; protein bound iodine; cholesterol; hematologic evaluation of coagulation defects; serology; ECG.

e. X-Ray Consistent With Diagnosis: Cerebral angiography; cervical spine x-ray; brain scan (except in moribund, uncooperative, or impractical situations).

##### 2. Treatment:

a. Special Procedures: Spinal tap; lumbar puncture with manometric reading (with caution in presence of increased intracranial pressure) without Queckenstedt's Test.

b. Special Procedures Consistent With Diagnosis: Ophthalmologic consultation; psychiatric consultation; vascular surgery consultation; physical therapy and rehabilitation, speech; anticoagulants; bed rest until stable.

#### *Indications for Transfer to Extended Care Facility*

1. With Moderate Neurologic Deficit: When patient is conscious and able to cooperate in a rehabilitation program, either transfer to rehabilitation unit or home program to continue program.

2. Profound Neurologic Deficit: Discharge when care at home or in chronic nursing facility matches care in the hospital or *no improvement in a four-week period*.

3. Most of rehabilitation activity should be extended care facility.

## **4. Diabetes Mellitus**

#### *Indications for Admission*

1. Poorly controlled diabetes which may require for control insulin or oral blood sugar lowering agents in addition to diet.

2. Diabetic acidosis.

3. Persistent vomiting or diarrhea.

4. Insulin coma or shock; severe or frequent hypoglycemic reactions.

5. Severe infections.

6. Symptomatic cardiovascular complications—peripheral, coronary, or cerebral.

7. Symptomatic diabetic neuropathy.

8. Severe and progressive ocular complications.

9. Symptomatic diabetic nephropathy.

10. When complicating care of other diseases or conditions; e.g., pregnancy, trauma, elective operation.

11. New diabetic.

#### *Probable Length of Stay*

1. Five to 20 days depending on ease of control.

#### *Complications That May Extend Length of Stay*

1. Same as admitting complications.

#### *Indications for Discharge*

1. In Maturity-Onset Type of Diabetes (non-insulin dependent diabetes): When the patient has been adequately instructed in dietary and technical aspects of diabetic control and plan of treatment is outlined, the patient is nearly normoglycemic (fasting blood sugar range 90-150 mgm%) before meals.

2. In Juvenile-Onset Type of Diabetes (insulin dependent diabetes): When the patient has been ade-

quately instructed in dietary and technical aspects of diabetic control, and is neither hypoglycemic nor excessively hyperglycemic (fasting blood sugar range 90-200 mgm%) and plan of treatment is outlined.

#### *Services Recommended*

##### *In Diabetes of Recent Onset*

##### 1. Work-up:

a. History: Specific reference to: Polyuria; polydipsia; polyphagia; weight change; visual acuity; paresthesia; presence, character, location of pain; genital pruritus, in women; family history of diabetes; obstetrical history with birth weight of newborn and fetal loss; skin infections.

*In Diabetes of Longer Standing Additional Reference to:* Previous diet; type and amount of insulin taken; type and dosage of oral agents used; occurrence, frequency, and timing of hypoglycemic reactions; acidosis or coma; frequency of urine and blood testing for sugar content.

b. Physical Examination: Specific reference to: Funduscopic examination; character of vessel wall and peripheral pulses; neurologic examination including deep tendon reflexes, vibratory sense, cranial nerves ("neurological negative" not satisfactory); character of skin, hair and nail growth in lower extremities; height; weight; visual acuity.

c. Laboratory: CBC (hemoglobin or hematocrit, white blood count, differential); urinalysis; blood sugar; fractional urines for glucose and/or ketones; blood urea nitrogen.

##### 2. Treatment:

a. Diet: Calories specified.

b. Insulin.

c. Oral hypoglycemic agents.

d. Fluids, antibiotics  $\pm$ .

#### *Indications for Transfer to Extended Care Facility*

Many uncomplicated diabetics (control problems, etc.) could go in a minimal care facility similar to ECF initially. They need daily but not hospital care.

### **5. Hypertensive Heart Disease, Arteriosclerotic Heart Disease and Rheumatic Heart Disease**

#### *Indications for Admission*

##### 1. Congestive failure.

a. Which cannot be readily controlled on an outpatient basis.

b. Precipitating cause not known or not controllable.

c. Of unknown etiology.

2. Completion of diagnostic catheterization studies or angiocardiology.

3. Uncontrolled arrhythmia or serious arrhythmia.

4. Angina pectoris, severe or prolonged and/or frequent.

5. Recent onset of angina pectoris.

6. Pulmonary or systemic arterial embolism.

7. Initiation of anticoagulation.

8. Acute rheumatic fever, rheumatic carditis or pericarditis.

9. Suspected subacute bacterial endocarditis.

10. Investigation of hypertension.

11. Control of acute hypertensive crises or severe hypertension.

12. Syncope.

13. Bleeding from anticoagulant therapy.

#### *Probable Length of Stay*

1. Indefinite. Weekly review after two weeks.

#### *Complications That May Extend Length of Stay*

1. Thromboembolism.

2. Arrhythmias.

3. Electrolyte imbalance.

4. Pulmonary edema and/or congestive failure.

5. Uremia.

6. Cerebrovascular accident.

7. Myocardial infarction.

8. Bacterial endocarditis.

9. Cardiac surgery.

10. Complication from anticoagulant therapy.

11. Infections.

12. Acute urinary retention.

13. Complications of antihypertensive therapy.

14. Failure to improve.

#### *Indications for Discharge*

1. Ambulatory.

2. Control of symptoms and signs present on admission.

3. Stable condition if disabled.

#### *Services Recommended*

##### 1. Work-Up:

a. History: Dyspnea; cough, hemoptysis; weight gain; edema; character and distribution of pain; previous cardiac disease; previous treatment; confirmation of indications for admission.

b. Physical Examination: Physical findings confirming indication for admission; blood pressure (both arms); heart: Size, rhythm and rate, sounds, murmur or friction rub; lungs: Type and distribution of rales, friction rub, breath sounds; neck: Neck vein distention; thyroid enlargement; carotid arteries; abdomen: Liver edge; spleen size; pulsation of abdominal aorta; femoral pulses; auscultation for bruits (in hypertension only); peripheral pulses and edema; eyes: Funduscopic.

c. Laboratory: CBC; urinalysis; ECG.

d. X-Ray: Chest x-ray; P.A.

e. X-Ray Consistent With Diagnosis—Cardiac films and fluoroscopy.

##### 2. Treatment:

a. Digitalis; diuretics; salt restrictions; oxygen;

anticoagulants; antihypertensives; anti-arrhythmic drugs; rest (This list can't be inclusive—too broad a category).

*Indications for Transfer to Extended Care Facility*

1. Social.
2. Limited improvement.
3. Limited cardiac reserve.

**6. Ulcer of Duodenum**

*Indications for Admission*

1. Diverticulosis: Rectal hemorrhage.
2. Diverticulitis: Colonic fistula; fixed, tender mass in left lower quadrant; fever, leucocytosis, and left lower quadrant tenderness; bowel hemorrhage; bowel obstruction; roentgenographic evidence suggesting carcinoma of colon.
3. Suspected acute abdominal emergency.

*Probable Length of Stay*

1. Seven to 14 days.

*Complications That May Extend Length of Stay*

1. Peritonitis—localized or generalized.
2. Ileus—mechanical, or paralytic.
3. Pneumonia.
4. Phlebitis or thromboembolism.
5. Urinary tract infection.
6. Fistula formation.
7. Hemorrhage.
8. Delayed resolution.

*Indications for Discharge*

1. Operated: Afebrile with control of complications; wound healing satisfactorily.
2. Non-operated: Afebrile; normal white blood count; free of pain and tenderness; no evidence of bleeding.

*Services Recommended*

1. Work-Up:
  - a. History: Specific reference to character and duration of pain—periodicity, localization, and response to food or antacid; pertinent social history; presence or absence of vomiting, hemorrhage, previous symptoms of active ulcer disease, and weight loss.
  - b. Physical Examination: Specific reference to presence of abdominal tenderness, distention, succussion splash, rectal examination for blood.
  - c. Laboratory: CBC; urinalysis; stool examination for blood.
  - d. Laboratory Consistent With Diagnosis: Blood urea nitrogen or creatinine; serum calcium; gastric analysis: 12-hour overnight volume, fasting volume, or histamine stimulation with proper placement of gastric tube.
  - e. Roentgenology: Upper gastrointestinal roentgenogram (recent).

f. Roentgenology Consistent With Diagnosis: Chest roentgenogram within the year.

2. Treatment:

- a. Diet and Antacids: Specific sedatives, tranquilizers.

**NEUROLOGY**

**1. Infections (Meningitis, Encephalitis, Brain Abscess, Epidural Abscess—Myelitis, etc.)**

*Indications for Admission*

1. Diagnosis warrants.

*Probable Length of Stay*

1. Two to six weeks.

*Complications That May Extend Length of Stay*

1. Decubiti.
2. Genito-urinary infection.
3. Renal calculi.
4. Thrombophlebitis.
5. Pulmonary embolism.
6. Pneumonia.
7. Fractures.
8. Cachexia.
9. Electrolyte imbalance.
10. Malnutrition.
11. Cardiopathy.
12. Hydrocephalus.

*Indications for Discharge*

Maximal improvement after chemotherapy and/or surgery for about two weeks.

*Services Recommended*

1. Work-Up:
  - a. Laboratory: CBC; urinalysis; chest X-ray; general medical history.
  - b. General Physical Examination: Blood pressure; heart; lungs; abdomen; extremities.
  - c. Neurological History: Presenting complaint(s); details of presenting complaint(s); past neurological and general medical history.
  - d. Neurological Examination: Cranial nerves; reflex status; motor system; sensory system; coordination; toe signs; mental status.
  - e. Optional Tests or Studies: EEG; brain scan; echoencephalography; lumbar puncture; lumbar puncture with manometrics; lumbar puncture with Queckenstedt; spinogram; pneumoencephalogram; ventriculogram; arteriography; blood culture; skull x-rays; spine x-rays; chemical profile; VDRL; Schilling; enzyme studies; thyroid profile; EKG; gastric analysis; Diagnex blue test; psychologic testing; audiometrics; calorics; visual fields; toxicological studies, i.e., serum, urine, hair, nail—analysis for heavy metals; evaluation for coexisting related or unrelated conditions, i.e., endocrino-



logic disease, thyroid, diabetes, etc., hypertension.

2. Treatment:

a. Physical therapy; occupational therapy; speech therapy; psychotherapy; care of non-neurologic medical conditions, i.e., diabetes, hypertension, neoplasm; anti-convulsants, specific drug therapy, surgery; vitamin—therapeutic or supplemental—oral or injectable; parenteral feeding, gastric feeding; tracheostomy; mechanical respiration; ancillary nursing care.

*Indications for Transfer to Extended Care Facility*

1. Rehabilitation program in unit or home for neurological residuals.
2. Transfer to psychiatric unit for psychotic residual or dementia.
3. Nursing home for severe brain damage with later admission to rule out secondary hydrocephalus, missed abscess, etc.

**2. Brain Tumor**

*Indications for Admission*

1. Diagnosis suspected.

*Probable Length of Stay*

1. Indeterminate.

*Complications That May Extend Length of Stay*

1. Decubiti.
2. Genito-urinary infection.
3. Renal calculi.
4. Thrombophlebitis.
5. Pulmonary embolism.
6. Pneumonia.
7. Fractures.
8. Cachexia.
9. Electrolyte imbalance.
10. Malnutrition.

*Indications for Discharge*

1. Negative diagnostic work-up.
2. Maximal recovery after surgery.
3. Rehabilitation unit for paralysis and gait problems.

*Services Recommended*

1. Work-Up:
  - a. Laboratory: CBC; urinalysis; chest x-ray; general medical history.
  - b. General Physical Examination: Blood pressure; heart; lungs; abdomen; extremities.
  - c. Neurological History: Presenting complaint(s); details of presenting complaint(s); past neurological and general medical history.
  - d. Neurological Examination: Cranial nerves; reflex status; motor system; sensory system; coordination; toe signs; mental status.
  - e. Optional Tests or Studies: EEG; brain scan; echoencephalography; lumbar puncture; lumbar puncture with manometrics; lumbar puncture with

Queckenstedt; pneumoencephalogram; ventriculogram; clivogram; arteriography; skull x-rays; lipoprotein electrophoresis; blood coagulation studies; VDRL; Schilling; enzyme studies; thyroid profile; EKG; gastric analysis; psychological testing; speech evaluation; audiometrics; calorics; electronystagmography; visual fields; ophthalmodynamography; thermography; toxicological studies, i.e., serum, urine, hair, nail—analysis for heavy metals; evaluation for coexisting related or unrelated conditions, i.e., endocrinologic disease, thyroid, diabetes, etc., hypertension.

2. Treatment:

a. Physical therapy; occupational therapy; speech therapy; psychotherapy; care of non-neurologic medical conditions, i.e., diabetes, hypertension, neoplasm; anti-convulsants; specific drug therapy, surgery, vitamin—therapeutic or supplemental—oral or injectable; parenteral feeding; gastric feeding; tracheostomy; mechanical respiration; ancillary nursing care; radiation therapy.

*Indications for Transfer to Extended Care Facility*

1. Rehabilitation unit for paralysis and gait problems.
2. Extended care unit for patients too ill for outpatient cobalt therapy.
3. Nursing home or home care after no improvement will result from further treatment.

**NEUROSURGERY**

**1. Lumbar Disc Syndrome**

*Indications for Admission*

1. Severe physical impairment due to pain and loss of function.
2. Progressive neurological deficit.
3. Unresponsive to out-patient treatment.
4. Post-laminectomy rehabilitation.

*Probable Length of Stay*

1. Non-operative—20 days.
2. Operative: Laminectomy—15 days post-surgery, preoperative.
3. Operative: Laminectomy and fusion—20 days post-surgery, preoperative.

*Complications That May Extend Length of Stay*

1. Infections.
2. Medical complications, i.e., thrombophlebitis, pulmonary embolism, etc.
3. Delayed wound healing.
4. Progressive neurologic deficit.
5. Change or additional diagnosis.
6. Failure to relieve pain.

*Indications for Discharge*

1. Improved, subjective and objective with conservative treatment.

2. Absence of complications as above.
3. Home environment adequate.

#### *Services Recommended*

1. Work-Up:
  - a. History: Present, past, systemic.
  - b. Physical Examination: General; specific—neuromuscular skeletal exam.
  - c. Laboratory: CBC; sedimentation rate; urinalysis; EMG, if indicated; chemistry profile and EKG, if indicated.
  - d. Radiographic: Routine lumbo-sacral examinations; spinogram if indicated; myelogram.
2. Treatment:
  - a. Surgical or conservative management.

#### *Indications for Transfer to Extended Care Facility*

1. Neurogenic deficit requiring additional rehabilitation and physical therapy.
2. General debilitation from severe complication such as pulmonary embolism.

## **2. Intracranial Mass Lesion (Tumor, Abscess, Cyst, etc.)**

#### *Visits*

Office.

#### *Frequency of Visits*

One to two visits to establish presumption of diagnosis.

## **OBSTETRICS AND GYNECOLOGY**

### **1. Pregnancy**

#### *Indications for Admission*

1. Labor.
2. Ruptured membranes.
3. Bleeding.
4. Signs or symptoms of ectopic pregnancy (see criteria for ectopic pregnancy).
5. Toxemia (pre-eclampsia or eclampsia).
6. Signs or symptoms of obstetrical catastrophe, i.e. premature separation of the placenta, uterine rupture, amniotic fluid embolus.
7. Inevitable or missed abortion (in some cases, threatened abortion).
8. Elective caesarean section.
9. Obstetrical complications which might indicate early delivery, i.e., maternal diabetes, Rh, isoimmunization.
10. Threatened premature labor.
11. Some cases of twins and hydramnios.
12. Habitual abortion.
13. Medical and surgical complications of pregnancy (most of these are conditions which would require admission in a non-pregnant patient also).
14. Incompetent cervix.
15. Cervical prolapse.

16. Hyperemesis gravidarum.
17. Therapeutic abortion.

#### *Probable Length of Stay*

1. Uncomplicated Delivery: Four to seven days postpartum.
2. Caesarean Section: Seven to ten days.
3. Antepartum Admission for Treatment of Obstetrical or Medical Complications: Duration of stay indeterminate.
4. If Complications as Mentioned Above: Indeterminate.

#### *Complications That May Extend Length of Stay*

1. Medical conditions as stated above.
2. Hemorrhage.
3. Infection.
4. Lacerations and other obstetrical trauma.
5. Retained secundines.
6. Uterine rupture.
7. Complications of anesthesia.
8. Postpartum psychosis.
9. Hematoma.
10. Postpartum surgical procedure, i.e., tubal ligation.
11. Thrombophlebitis.

#### *Indications for Discharge*

1. Uncomplicated puerperium with no extenuating circumstances, i.e., home situation.

#### *Services Recommended*

1. Work-Up:
  - a. History: Special reference to menstrual history, previous obstetrical history, abdominal pain or contractions, bleeding.
  - b. Physical Examination: With attention to nature of contractions, fetal size, abnormal tenderness, fetal position, amount of bleeding, condition of membranes, fetal heart, clinical pelvimetry.
  - c. Laboratory: CBC; urinalysis; blood type and Rh if not previously recorded.
  - d. Other Laboratory Studies Which Might Be Indicated: X-rays—flat plate, pelvimetry; type and cross-match; coagulation studies, electrolytes, chemical screening, specific tests on amniotic fluid, estriol (serial), cultures of cervix, blood and amniotic fluid, cord blood studies (i.e., Coombs, blood gases, electrolytes, serology, sugar, BUN).
2. Treatment:
  - a. Routine vaginal delivery and episiotomy (including forceps or vacuum extraction).
  - b. Caesarean section.
  - c. Caesarean section—hysterectomy.
  - d. Induction and delivery (all methods).
  - e. Hysterectomy.
  - f. Amniocentesis.
  - g. Amnioscopy.

- h. Fetal monitoring.
- i. Medical treatment of complications of pregnancy.
- j. See under ectopic pregnancy and abnormal bleeding for treatment of tubal pregnancy and first trimester abortion.

*Indications for Transfer to Extended Care Facility*  
Not applicable.

## 2. Abnormal Uterine Bleeding

*Indications for Admission*

- 1. Metrorrhagia (including post-coital bleeding).
- 2. Menorrhagia.
- 3. Cervical or endometrial polyps.
- 4. Incomplete or missed abortion.
- 5. Post-menopausal bleeding.

*Probable Length of Stay*

- 1. Uncomplicated D and C alone—one to three days postoperative.

*Complications That May Extend Length of Stay*

- 1. Infection.
- 2. Hemorrhage.
- 3. Perforation.
- 4. Additional diagnoses.

*Indications for Discharge*

- 1. Satisfactory convalescence with adequate wound healing and absence (or control) of complications.

*Services Recommended*

- 1. Work-Up:
  - a. Adequate history and physical to include careful pelvic examination with special reference to menstrual, obstetrical, and endocrine history.
  - b. Laboratory: CBC; urinalysis; chest x-ray; history of cervical cytology within previous 12 months.
  - c. Other studies as indicated—i.e., endocrine evaluation, hematologic and coagulation studies, chemical profile, EKG.
- 2. Treatment:
  - a. Examination under anesthesia, dilatation and curettage, biopsies if indicated.
  - b. Hysterectomy if indicated by findings on above or history (i.e., intractable bleeding unresponsive to other measures).
  - c. Blood transfusion.
  - d. Electrocautery.
  - e. If malignancy or adnexal pathology is found, refer to appropriate diagnosis.

*Indications for Transfer to Extended Care Facility*  
None.

## 3. Fibromyomata Uteri

*Indications for Admission*

- 1. Size—greater than three months pregnancy.

- 2. Pain interfering with normal function.
- 3. Rapid growth.
- 4. Excessive vaginal bleeding secondary to submucous myoma.
- 5. Differentiation between lateral myoma (pedunculated or intraligamentous) and solid ovarian neoplasm.
- 6. Bladder and bowel symptoms secondary to extrinsic pressure from myomata.
- 7. Habitual abortion.
- 8. Suspicion of malignancy.

*Probable Length of Stay*

- 1. Preoperative: Five days depending on extent of preoperative work-up.
- 2. Postoperative: Seven to ten days (if hysterectomy or myomectomy).

*Complications That May Extend Length of Stay*

- 1. Pre-existing medical illness.
- 2. Hemorrhage.
- 3. Infection—wound or other.
- 4. Thromboembolic disease.
- 5. Fever.
- 6. Dehiscence.
- 7. Complications of anesthesia.
- 8. Pelvic hematoma.
- 9. Urinary tract infection, injury, or retention.
- 10. Additional hospitalization may be necessary if the patient lives outside of the immediate hospital community.
- 11. Postoperative ileus or bowel obstruction.

*Indications for Discharge*

- 1. Satisfactory convalescence with adequate wound healing and absence (or control) of complications.

*Services Recommended*

- 1. Work-Up:
  - a. History and physical with specific reference to menstrual, obstetrical, gastrointestinal and genitourinary histories. Pelvic exam to include reference to size and location of myomata.
  - b. Laboratory: CBC; urinalysis; chest x-ray; cytology within the previous 12 months; type and cross-match; postoperative hemoglobin and/or hematocrit.
  - c. Other studies as indicated, i.e., pregnancy test; barium enema; IVP; cystoscopy; hysterosalpingogram; chemical profile; EKG.
- 2. Treatment:
  - a. Examination under anesthesia; dilatation and curettage, biopsies and frozen sections as indicated.
  - b. Hysterectomy.
  - c. Myomectomy may be indicated where preservation of childbearing function is desired (may include uterine suspension).



d. Incidental appendectomy by surgeon's discretion.

e. Transfusion where indicated.

#### *Indications for Transfer to Extended Care Facility*

Only indicated if patient suffering from other debilitating disease which would make continued convalescence at home difficult or impossible.

### **4. Uterine Neoplasms—Malignant**

#### *Indications for Admission*

1. See abnormal uterine bleeding, also myomata uteri.
2. Unexplained enlargement of uterus.
3. Positive cytology and/or biopsy.

#### *Probable Length of Stay*

1. Presurgery work-up—up to five days.
2. Postoperative D and C and radium—three to seven days.
3. Hysterectomy—seven to ten days.

#### *Complications That May Extend Length of Stay*

See cervical neoplasms.

#### *Indications for Discharge*

Satisfactory convalescence with absence of complications.

#### *Services Recommended*

1. Work-Up:
  - a. History and physical examination with reference to pelvic examination, especially uterine corpus; also with special reference to menstrual, obstetrical, and endocrine history; also with special reference to vagina, cervix and uterus.
  - b. Laboratory: CBC; urinalysis; type and cross-match, if indicated; chemical screening profile; cytology; EKG; glucose tolerance.
  - c. X-Ray: Chest; IVP; barium enema; spine and pelvic with or without bone survey. Lymphangiography and other special procedures as indicated.
  - d. Special Procedures: Such as proctoscopy, sigmoidoscopy and cystoscopy.
2. Treatment:
  - a. E.U.A., Schillers, D and C, frozen section, followed by hysterectomy—or,
  - b. E.U.A., D and C, followed by intracavitary and vaginal radium followed by hysterectomy.
  - c. External irradiation.
  - d. Chemotherapy.
  - e. Postoperative Laboratory: CBC platelet count, if indicated; urinalysis with culture of urine blood, drainage, etc.; blood chemistries and gases.

#### *Indications for Transfer to Extended Care Facility*

1. External irradiation.
2. Chemotherapy.
3. Terminal care.

### **5. Cervical Neoplasms—Benign or Malignant**

#### *Indications for Admission*

1. Suspicious Pap smear—abnormal.
2. Cervicitis not responsive to office treatment.
3. Cervical polyps, fibroid and other benign lesions.
4. Positive cervical biopsies.
5. Cervical stenosis, stricture or laceration.

#### *Probable Length of Stay*

1. Presurgical work-up to five days.
2. Postoperative D and C—one to three days (uncomplicated).
3. D and C with conization, amputation and repair—three to four days.
4. Hysterectomy—seven to ten days.
5. Radical hysterectomy with node dissection and/or exenterative procedures (unpredictable).

#### *Complications That May Extend Length of Stay*

1. Age debility.
2. Hemorrhage.
3. Infection.
4. Fever—unknown origin.
5. Metastasis.
6. Complication of radiation therapy.
7. See complication of hysterectomy—including anesthesia.
8. Reaction to radiation therapy.
9. Reaction to chemotherapy.
10. Postoperative ileus or bowel obstruction.

#### *Indications for Discharge*

1. Satisfactory convalescence with absence of complications.

#### *Services Recommended*

1. Work-Up:
  - a. History: Complete.
  - b. Physical Examination: To include pelvic examination with special reference to vagina, cervix and uterus.
  - c. Laboratory: CBC; urinalysis; type and cross-match, if indicated; chemical screening profile; cytology; EKG.
  - d. Special Procedures: Culdoscopy; sigmoidoscopy; cystoscopy; with or without retrograde pyelography.
  - e. X-Ray: Chest; IVP; barium enema; spine and pelvic with or without bone survey.
2. Treatment:
  - a. Benign—E.U.A., Schillers, D and C, biopsy, cauterize, polypectomy, frozen section, conization, amputation, trachelorrhaphy, hysterectomy, if indicated, including wide vaginal cuff.
  - b. Malignant—as above—plus radical hysterectomy—pelvic lymphadenectomy, exenterative pro-

cedures, radiotherapy—internal and/or external, chemotherapy—blood transfusion.

3. Postoperative Laboratory:

- a. CBC platelet count, if indicated.
- b. Urinalysis with culture of urine blood, drainage, etc.
- c. Blood chemistries and gases.

*Indications for Transfer to Extended Care Facility*

1. Radiation therapy.
2. Chemotherapy.
3. Terminal care.

## OPHTHALMOLOGY

### 1. Cataracts

*Indications for Admission*

1. Diminished vision so as to interfere significantly with the patient's mode of living.
2. Necessity of examining the posterior portion of the eye where sufficient lens opacity precludes such examination.
3. Development of complications such as glaucoma or uveitis which are attributable to the cataract or the imminence of such complications as in intumescent or hypermature cataract.
4. Subluxated or dislocated lens with impending or present complications.
5. To remove an intralenticular foreign body with cataract as in "1."
6. Cosmetic purposes—to remove an unsightly white opacity.

*Probable Length of Stay*

1. In uncomplicated cases, postoperative, seven days or less.
2. If medical work-up required, three days or less preoperative.

*Complications That May Extend Length of Stay*

1. Panophthalmitis and endophthalmitis.
2. Iris prolapse.
3. Loss of anterior chamber.
4. Intraocular hemorrhage.
5. Wound separation.
6. Glaucoma and uveitis.
7. Complications not directly related to mechanics of intraocular surgery (thrombophlebitis, pulmonary embolism, pneumonia, etc.).

*Indications for Discharge*

1. Normal recovery and absence of complications.

*Services Recommended*

1. Work-Up:
  - a. History: Specific reference to previous visual acuity in affected eye; ocular injury or disease; systemic disease or allergy; hereditary disease.
  - b. Physical Examination: Specific reference to

best corrected vision in each eye; ocular tension; slit lamp examination; external examination; fundoscopic examination; refraction; lacrimal irrigation and or probe (optional); light projection (optional); visual field (optional); gonioscopy (optional).

c. Laboratory: WBC, Hgb. differential; urinalysis; chest x-ray; serum survey (SM-12) (optional) (Hgb. blood sugar, etc.).

2. Treatment—Surgical:

- a. Linear extraction.
- b. Aspiration extraction.
- c. Extracapsular extraction.
- d. Intracapsular extraction.
- e. Discission.
- f. Capsulectomy.

*Indications for Transfer to Extended Care Facility*

1. Poor visual acuity.
2. Unable for self care.
3. Prolongation of hospital complications listed.
4. Concurrent systemic disease.

### 2. Corneal Disease

*Indications for Admission*

1. Corneal scar involving decrease in visual acuity.
2. Corneal infection or ulceration not responsive to medical treatment.
3. Corneal degenerative processes resulting in decrease of visual acuity (e.g. keratoconus, epithelial or endothelial disease, etc.).

*Probable Length of Stay*

1. Surgical—lamellar or penetrating keratoplasty, three days or less preoperative and 14 days or less postoperative.
2. Repeat hospitalization for suture removal may be necessary, two days or less.

*Complications That May Extend Length of Stay*

1. Postoperative flat chamber.
2. Postoperative glaucoma.
3. Postoperative infection or inflammation.
4. Wound separation.
5. Intraocular hemorrhage.
6. Systemic graft reaction.
7. Complications not related to intraocular surgery.

*Indications for Discharge*

1. Normal recovery and absence of complications.

*Services Recommended*

1. Work-Up:
  - a. History: Previous visual acuity; injury; family history; systemic disease; ocular disease or operation.
  - b. Physical Examination: Visual acuity; refraction; slit lamp examination; fundus exam;

intraocular tension; external exam; visual field (optional); photography (optional).

c. Laboratory: WBC, Hgb., differential; urinalysis; chest x-ray; serum survey (SM-12) (optional).

2. Treatment: Surgical.

a. Lamellar keratoplasty.

b. Penetrating keratoplasty.

c. Keratoprosthesis.

d. Epidermatoprosthesis.

#### *Indications for Transfer to Extended Care Facility*

1. Poor visual acuity.
2. Unable for self care.
3. Prolongation of hospital complications listed.
4. Concurrent systemic disease.

## ORTHOPEDICS

### 1. Fracture of Hip

#### *Indications for Admission*

1. Hip fracture.

#### *Probable Length of Stay*

1. Non-operative, impacted—30 days.
2. Operative—Skeletal traction—90 days.
3. Operative—Internal fixation—20 days.
4. Operative—Femoral head prosthesis—20 days.

#### *Complications That May Extend Length of Stay*

1. Medical complications, acute and chronic.
2. Infection.
3. Metal failure or loss of stability.
4. Social-economic problems.

#### *Indications for Discharge*

1. Stable fracture site.
2. Healed operative wound with no infection.
3. Reasonably independent for daily living activities.
4. Reasonable home assistance available.

#### *Services Recommended*

1. Work-Up:
  - a. History: Present, past, systemic.
  - b. Physical Examination: General; specific—neuromuscular vascular status of extremity.
  - c. Laboratory: Chemistry profile and EKG; CBC; urinalysis.
  - d. Radiographic: Bi-plane x-ray of hip three, untreated; chest x-ray; bi-plane postoperative x-rays.
2. Treatment:
  - a. Adequate reduction and fixation or replacement with femoral head prosthesis.
  - b. Adequate postoperative care—including early mobilization.
  - c. Concomitant medical conditions appropriately evaluated and treated.

#### *Indications for Transfer to Extended Care Facility*

1. Age, competency, environment.
2. Limited physical ability because of immobilizing cast.
3. Level of physical therapy, occupational and rehabilitation not available in nursing.
4. Supervised treatment for complications and/or medical or surgical conditions.

### 2. Strain, Lumbosacral, Acute, Severe

#### *Indications for Admission*

1. Severe degree of physical impairment.
2. Pain unrelieved by reasonable medication.
3. Inadequate response to out-patient treatment.

#### *Probable Length of Stay*

1. 15 days.

#### *Complications That May Extend Length of Stay*

1. Medical complications.
2. Change of diagnosis.

#### *Indications for Discharge*

1. Improved or improving, subjectively and objectively.
2. General condition satisfactory and stable.

#### *Services Recommended*

1. Work-Up:
  - a. History: Present, past, systemic.
  - b. Physical Examination: General; specific—neuromusculoskeletal.
  - c. Laboratory: Routine CBC; sedimentation rate; urinalysis.
  - d. Radiographic: Myelogram, EMG when indicated; routine x-rays lumbo-sacral spine.
2. Treatment:
  - a. Ward care.
  - b. Physical therapy.

#### *Indications for Transfer to Extended Care Facility*

1. Lack of adequate home environment in specific cases such as for the aged patient.

## OTOLARYNGOLOGY

### 1. Ear Infections and Disorders

#### *Indications for Admission*

1. Unexplained convulsions.
2. Facial nerve paralysis.
3. Mastoiditis.
4. Labyrinthitis.
5. Lateral sinus thrombosis.
6. Subperiosteal, dural (epidural and subdural) or brain abscess.
7. Meningitis and meningismus.
8. Petrositis.
9. Cellulitis of skin and canal and pinna including chondritis.
10. Diabetes.



*Probable Length of Stay*

1. Indeterminate.

*Complications That May Extend Length of Stay*

1. Metastatic abscess.
2. Perichondritis.
3. Resistant organism.

*Indications for Discharge*

1. Hearing improving.
2. Ear discharge improved.
3. Complications are controlled.
4. Afebrile at time of discharge.

*Services Recommended*

1. Work-Up:
  - a. History and Physical Examination: Specific reference to confirm indications for admission with attention to neurologic examination.
  - b. Laboratory: CBC (hematocrit, white count, differential); urinalysis; culture and sensitivity of purulent discharge.
  - c. X-Ray: Routine mastoid.
  - d. Special Procedures: Tests of hearing and labyrinthine function; lumbar puncture when indicated; blood culture when indicated; myringotomy; mastoid and other temporal bone surgery as indicated.

*Indications for Transfer to Extended Care Facility*  
Not usually indicated.**2. Nasal Pathology Requiring Surgery***Indications for Admission*

1. Nasal obstruction due to:
  - a. Deviated nasal septum.
  - b. Nasal polyps.
  - c. Hypertrophied turbinates.
  - d. External nasal deformity.
  - e. Synechia.
2. Chronic sinusitis.
3. Epistaxis.
4. Septal erosion and ulceration.
5. For closure of septal perforation.
6. Nasal fracture.
7. Ozena-atrophia rhinitis.
8. Evaluation and possible treatment of tumor of nose, sinuses.
9. Septal abscess.
10. Choanal atresia.
11. Removal of foreign body.

*Probable Length of Stay*

1. Postoperative, one to four days.

*Complications That May Extend Length of Stay*

1. Bleeding.
2. Infection.

*Indications for Discharge*

1. Afebrile.
2. No bleeding.

*Services Recommended*

1. Work-Up:
  - a. History and Physical Examination: Specific reference to confirm cause for admission with possible emphasis on allergic and endocrine history.
  - b. Laboratory: CBC (hematocrit, white count, differential); urinalysis; special studies as indicated.
  - c. X-Rays: X-rays of nasal bones, paranasal sinuses, skull as indicated.
2. Treatment:
  - a. Surgical.

*Indications for Transfer to Extended Care Facility*  
Not usually indicated.**3. Tonsillectomy and/or Adenoideectomy***Indications for Admission*

1. Frequent, severe episodes of tonsillitis.
2. Repeated severe or chronic cervical adenitis.
3. Peritonsillar abscess.
4. Persistent or frequent serous or purulent otitis media.
5. Persistent infection or nasal obstruction by adenoids.
6. Hearing loss due to eustachian tube obstruction.
7. Feeding problem secondary to obstruction by tonsils or adenoids.
8. Incisional or excisional biopsy of either tonsil or adenoid in search for primary neoplasm.

*Probable Length of Stay*

1. Children and infants (12 years and younger): one to two days.
2. Adults: one to four days.

*Complications That May Extend Length of Stay*

1. Bleeding.
2. Infection.
3. Vomiting with dehydration.
4. Aspiration of blood or mucus.
5. Proper home care not available.

*Indications for Discharge*

1. No evidence of significant bleeding.
2. Absence of infection or unusual fever (if 102° patient stays in hospital).
3. Hydration adequate.

*Services Recommended*

1. Work-Up:
  - a. History: Specific reference to recent illness or exposure to contagious diseases. The history of indications for the operation, medications, bleeding tendencies, and allergies.

b. Physical Examination: Specific reference to description of tympanic membrane nasal airway, tonsils and regional lymph nodes.

c. Laboratory: CBC (hematocrit, white blood count, differential); urinalysis.

d. X-Ray: Chest x-ray.

#### *Indications for Transfer to Extended Care Facility*

Not usually indicated.

## PEDIATRICS

### 1. Bronchitis, Acute Bronchitis, Laryngotracheitis, and Acute Respiratory Infection in Children

#### *Indications for Admission*

1. Respiratory distress (e.g. stridor, cyanosis, tachypnea, dyspnea, chest retraction).

2. Impaired fluid balance.

3. Concomitant disease of serious degree (diabetes mellitus, cystic fibrosis, chronic respiratory disease, heart disease, chronic cardio-respiratory disease).

4. Incapacity of responsible adult to care for sick child.

5. Incapacity of responsible adult to care for illness in home environment.

#### *Probable Length of Stay*

1. Two to seven days.

#### *Complications That May Extend Length of Stay*

1. Asthmatic bronchitis.

2. Vomiting.

3. Concomitant diagnoses.

4. Pneumothorax.

5. Tracheostomy.

6. Incapacity of responsible adult to care for sick child.

#### *Indications for Discharge*

1. Improvement in clinical condition, e.g.,

a. No respiratory distress.

b. Afebrile 24-36 hours.

c. Adequate fluid and nutritional intake.

#### *Services Recommended*

1. Work-Up:

a. History: Specific reference to respiratory symptoms and/or other admission indications above; past history of respiratory illness; effect of bronchitis on coexistent disease.

b. Physical Examination: Specific reference to auscultation and percussion of lungs; description of respiratory distress; temperature, pulse, respirations, blood pressure (nurse or physician recording); skin turgor (if admitted for dehydration).

c. Laboratory: CBC (hematocrit, hemoglobin, white blood count and differential); urinalysis;

throat culture if epiglottitis; nasopharyngeal culture if antibiotic given.

d. X-Ray: Chest x-ray.

2. Treatment:

a. Antibiotics, only in epiglottitis or suspected bacterial infection.

b. Appropriate supportive measures:

1. Fluid therapy.

2. Environmental control.

#### *Indications for Transfer to Extended Care Facility*

Unsuitable home environment for proper convalescence.

### 2. Diabetes

#### *Indications for Admission*

1. Poorly controlled diabetes which may require for control insulin or oral blood sugar lowering agents in addition to diet.

2. Diabetic acidosis.

3. Persistent vomiting or diarrhea.

4. Insulin coma or shock; severe or frequent hypoglycemia reactions.

5. Severe infections.

6. Symptomatic cardiovascular complications—peripheral, coronary or cerebral.

7. Symptomatic diabetic neuropathy.

8. Severe and progressive ocular complications.

9. Symptomatic diabetic nephropathy.

10. When complicating care of other diseases or conditions, e.g., pregnancy, trauma, elective operation.

11. All initial work-ups for pediatric age range.

#### *Probable Length of Stay*

1. If uncomplicated and easily controlled, seven to 14 days.

2. When controlled with difficulty, 10-20 days.

#### *Complications That May Extend Length of Stay*

1. Same as admitting complications.

#### *Indications for Discharge*

1. Fluid and electrolyte balance restored.

2. Patient or family able to continue proper care in giving medication and diet control.

3. Blood sugar within reasonable levels, i.e., diabetes in control.

4. No unusual complication of disease.

#### *Services Recommended*

1. Work-Up:

a. History: Reflects data related to indication for admission.

b. Physical Examination: Dehydration; central nervous system evaluation; infections.

c. Laboratory: Electrolytes and blood gases; glucose; urine; appropriate cultures.

d. X-Ray: Chest x-ray.

2. Treatment:
  - a. Calorie control.
  - b. Fluid and chemical control.
  - c. Normoglycemic support.
  - d. Control of infection.

#### *Indications for Transfer to Extended Care Facility*

1. Unable to manage program of medication and diet control.
2. Blood sugars persistently unstable despite good medical management.

### **3. Pneumonia in Children**

#### *Indications for Admission*

1. Dyspnea.
2. Cyanosis.
3. Persistent fever.
4. Recurrent vomiting or inadequate fluid intake.
5. Meningismus: Could probably be eliminated by diagnostic tap before admission in most patients.
6. Incapacity of responsible adults to care for sick child.
7. Recurrent bronchopneumonia.
8. Complications as listed under *Complications* below.

#### *Probable Length of Stay*

1. Two to ten days.

#### *Complications That May Extend Length of Stay*

1. Empyema.
2. Persistent atelectasis.
3. Abscess.
4. Metastatic infections (abscesses, osteomyelitis).
5. Superimposed infections (initially viral, now bacterial).
6. Bronchiectasis.
7. Cystic fibrosis.
8. Chronic disease: diabetes, renal or heart disease.
9. Persistent pneumonia unresponsive to adequate therapy.
10. Anemia (requiring transfusion or investigation).
11. Aspirated foreign body.

#### *Indications for Discharge*

1. Asymptomatic or stabilization of symptoms sufficiently to allow home care.
2. Afebrile, 36-48 hours.
3. Significant improvement in physical findings and no worsening on x-ray.

#### *Services Recommended*

1. Work-Up:
  - a. History: Specific reference to indications for admission; character of cough.

b. Physical Examination: Specific reference to general appearance (cyanosis, severity of illness); character of respiration; auscultation and percussion of chest.

c. Laboratory: CBC (hematocrit, white count, differential); urinalysis; blood culture, nasopharyngeal and/or throat culture; tuberculin skin test within one year; lung biopsy in persistent unexplained pneumonia or recurrent pneumonia.

d. X-Ray: Chest x-rays, P.A. and lateral.

#### 2. Treatment:

a. Antibiotics—appropriate; supportive measures.

#### *Indications for Transfer to Extended Care Facility*

1. Chronic type of pneumonia, e.g., tuberculosis or cystic fibrosis.
2. Unable to care for at home.

### **4. Concussion**

#### *Indications for Admission*

1. Headache.
2. Unconsciousness.
3. Dizziness.
4. Transient neural dysfunction due to impact on the head.

#### *Probable Length of Stay*

1. 1½ days.

#### *Complications That May Extend Length of Stay*

1. Bloody spinal fluid.
2. Other injuries.
3. Development of new neurologic findings.
4. Vomiting.

#### *Indications for Discharge*

1. Alert enough to carry on daily activities or guardian can resume usual care.
2. Stabilization of any abnormal neurologic signs or disappearance of same.

#### *Services Recommended*

1. Work-Up:
  - a. History: Same as indication for admission; neurologic examination.
  - b. Laboratory: Skull films; brain scan; echoencephalogram; urinalysis; CBC, lumbar puncture.
  - c. Roentgenology: Chest x-ray.
2. Treatment:
  - a. Serial neurologic observations.
  - b. Vital signs.

#### *Indications for Transfer to Extended Care Facility*

1. Coma, prolonged.
2. Unusual feeding problems.
3. Unsuitability of home environment for continued convalescence.



## 5. Gastroenteritis and Colitis in Children

### *Indications for Admission*

1. Prolonged diarrhea with watery stools and any two or more of the following:
  - a. Dehydration and/or shock.
  - b. Abdominal distention, masses or tenderness.
  - c. Oliguria.
  - d. Hyperpnea.
  - e. Fever.
  - f. Abdominal pain.
  - g. Rectal bleeding (bloody red or black stools).
  - h. Convulsions.
2. Uncontrolled vomiting.
3. In infancy (under two years): One or more watery stools persisting for 48 hours or more on clear liquid diet without improvement.

### *Probable Length of Stay*

1. Five to ten days.

### *Complications That May Extend Length of Stay*

1. Recurrence of diarrhea, nausea or vomiting.
2. Inability of parents to care for sick child.
3. Continued blood in stool.

### *Indications for Discharge*

1. No further manifestation of disease, e.g., no diarrhea or vomiting.
2. Fluid and electrolyte balance normal or approaching normal.
3. Afebrile.

### *Services Recommended*

1. Work-Up:
  - a. History: Specific reference to indications for admission.
  - b. Physical Examination: Specific reference to: Skin turgor; abdominal examination including peristalsis; dehydration, state or degree; rectal examination if stools are bloody; neurologic examination if convulsions occur; general physical appearance.
  - c. Laboratory: CBC (hematocrit, white count, differential); urinalysis; stool culture; electrolytes and acid base studies; BUN and FBS.
  - d. X-Ray: Chest x-ray.
2. Treatment:
  - a. Intravenous fluids if dehydrated or persistent vomiting.
  - b. Diet order.
  - c. Non-specific medications.
  - d. Specific medications on basis of suspected or proven bacterial infection.

### *Indications for Transfer to Extended Care Facility*

1. Need for continued parenteral nutrition or gavage feeding.
2. Unsuitable home environment for proper convalescence.

## SURGERY

### 1. Acute Appendicitis

#### *Indications for Admission*

1. Abdominal pain, nausea and vomiting, anorexia.
2. Abdominal (RL Quad or Pelvic) mass.

#### *Probable Length of Stay*

1. Three to five days.

#### *Complications That May Extend Length of Stay*

1. Wound complications.
2. Intraperitoneal abscess.
3. Cardio-pulmonary.
4. Thrombophlebitis.
5. Bowel obstruction.

#### *Indications for Discharge*

1. Afebrile and complications controlled.
2. Wound healing satisfactorily.

#### *Services Recommended*

1. Work-Up:
  - a. History and Physical Examination: Complete.
  - b. Laboratory: CBC; urinalysis.
  - c. X-Ray: IVP (optional); positive urinalysis or CVA tenderness; flat plate of abdomen if distention; vaginal smear and/or culture.
2. Treatment:
  - a. Appendectomy.
  - b. Drainage of appendiceal abscess.

#### *Indications for Transfer to Extended Care Facility*

None.

### 2. Duodenal Ulcer

#### *Indications for Admission*

1. Upper G.I. series showing ulcer—symptoms of pain, discomfort, etc.
2. Chronicity with demonstrated ulcer.
3. Obstruction of gastric outlet.
4. Perforation.
5. Bleeding—acute or chronic with suspected ulcer.

#### *Probable Length of Stay*

1. Operative—seven to 12 days.

#### *Complications That May Extend Length of Stay*

1. Wound complication.
2. Obstruction.
3. Thrombophlebitis.
4. Cardiopulmonary.
5. Postoperative hemorrhage.

#### *Indications for Discharge*

1. Non-operated.
  - a. Complete healing of ulcer with X-ray confirmation.
  - b. 50 per cent healing of large ulcer with gas-

troscopic confirmation of benign lesion.

- c. Asymptomatic.
2. Operated.
  - a. Afebrile.
  - b. Wound healing satisfactorily.
  - c. Return of gastrointestinal function.
  - d. Complications under control.

#### *Services Recommended*

1. Work-Up:
  - a. History and Physical Examination: Complete.
  - b. Laboratory: Routine.
  - c. X-Ray: Upper G.I. x-ray studies; appropriate x-rays; flat and upright abdominal x-rays (optional); electrolytes (optional).
2. Treatment:
  - a. Vagotomy and drainage procedure.
  - b. Vagotomy and partial gastrotomy.
  - c. Gastric resection.
  - d. Closure perforation.

#### *Indications for Transfer to Extended Care Facility*

Yes, for postoperative complications of partial outlet obstruction.

### **3. Biliary Tract Surgery**

#### *Indications for Admission*

1. Suspected cholecystitis.
  - a. Pain, nausea, vomiting.
  - b. Recurrent gallbladder attacks.
  - c. Fever.
  - d. Jaundice.
2. X-ray diagnosis of cholelithiasis and/or cholecystitis.
3. Admitted for operation.

#### *Probable Length of Stay*

1. Seven to ten days.
2. With common duct exploration and T-tube—eight to ten days.

#### *Complications That May Extend Length of Stay*

1. Wound complication.
2. Cardiopulmonary.
3. Jaundice.
4. Pancreatitis.
5. Cholangitis.
6. Peritonitis.
7. Biliary fistula.
8. Diabetes(ic) management.
9. Phlebothrombosis.

#### *Indications for Discharge*

1. Afebrile.
2. Wound healing satisfactorily.
3. Recovery of gastrointestinal functions.
4. Complications under control.

#### *Services Recommended*

1. Work-Up:

a. History and Physical Examination: Complete, abdomen for mass and tenderness; jaundice; history related to admission symptoms.

b. Laboratory: Routine; serum and/or urine amylase (optional); required in acute cases only; EKG (optional under 40 years old).

c. X-Ray: Cholecystogram (optional in acute cholecystitis); IV cholangiogram (optional), liver profile (optional in jaundiced or febrile cases only).

2. Treatment:

- a. Acute cholecystitis.
- b. Threatened rupture.
- c. Obstructive jaundice.
- d. Presence of stones.
- e. Diagnosis of recurrent chronic cholecystitis.
- f. Pancreatitis.

#### *Indications for Transfer to Extended Care Facility*

None directly from surgery.

### **4. CA of the Breast (Mass or Suspected Mass in the Breast)**

#### *Indications for Admission*

1. Mass in the breast—demonstrated by palpation.
2. Mammogram—suggesting breast cancer.
3. Thermogram—suggesting breast cancer.
4. Nipple discharge.
5. Axillary mass.

#### *Probable Length of Stay*

1. Five to ten days.

#### *Complications That May Extend Length of Stay*

1. Infection.
2. Slough of skin flaps.
3. Seroma.
4. Lymphedema.

#### *Indications for Discharge*

1. Afebrile.
2. Wound healing satisfactorily.
3. Arrangements for follow-up care.

#### *Services Recommended*

1. Work-Up:
  - a. Complete History and Complete Physical: Description of mass, position, size, axilla and supraclavicular, other breast.

b. X-Ray: Chest x-ray.

c. (All optional) Bone survey, mammogram, alkaline phosphatase.

2. Treatment:

a. Biopsy.

b. Mastectomy (simple, modified radical, radical).

#### *Indications for Transfer to Extended Care Facility*

Not for usual case.

## 5. Varicose Veins

### *Indications for Admission*

1. Leg symptoms of easy fatigability, pain.
2. Thrombosis.
3. Stasis ulcerations.
4. "Cosmetic."
5. Symptomatic varicosities.
6. Thrombophlebitis in patient with varicosities.
7. Stasis ulcerations.

### *Probable Length of Stay*

1. Preoperative—one to ten days for ulcer and cellulitis.
2. Postoperative—two to five days, longer for ulcers.

### *Complications That May Extend Length of Stay*

1. Hematoma.
2. Infection.
3. Skin slough.
4. Thrombophlebitis.

### *Indications for Discharge*

1. Afebrile.
2. Wound healing satisfactorily.
3. Instruction for support complete.

### *Services Recommended*

1. Work-Up:
  - a. History and Physical Examination: Complete.
  - b. Laboratory: Routine.
  - c. X-ray: Chest.
2. Treatment:
  - a. High saphenous ligation and stripping; excision of multiple varicosities and ligation of incompetent perforations.
  - b. Subfascial dissection of incompetent perforations for stasis ulceration.
  - c. Skin graft.

### *Indications for Transfer to Extended Care Facility*

None.

## 6. Peripheral Arteriosclerotic Obstructive Disease

### *Indications for Admission*

1. Significant signs and symptoms of arterial insufficiency of extremities.

### *Probable Length of Stay*

1. Preoperative—three to seven days.
2. Postoperative—10-14 days.

### *Complications That May Extend Length of Stay*

1. Persistent or exacerbated signs or symptoms of peripheral and vascular insufficiency.
2. Myocardial failure or infarction.
3. Renal failure, etc.
4. Postoperative ileus and/or bowel obstruction.

### *Indications for Discharge*

Recovery from surgery (usually 10-20 days).

### *Services Recommended*

1. Work-Up:
  - a. History: Of claudication, rest pain, hypertension.
  - b. Physical Examination: Blood pressure; peripheral pulses; bruits; trophic ulcers; gangrene.
  - c. Laboratory: Arteriogram in most cases.
2. Treatment:
  - a. Same as indication for admission.

### *Indications for Transfer to Extended Care Facility*

Prolonged course due to complications or advanced age.

## 7. Tracheal, Bronchial or Pulmonary Disease Requiring Bronchoscopy

### *Indications for Admission*

1. Need for establishment of diagnosis via endoscopy (bronchoscopy).
2. Need for therapeutic bronchoscopy.

### *Probable Length of Stay*

1. Three to five days average care, longer if findings require additional therapy, medical or surgical.

### *Complications That May Extend Length of Stay*

1. If surgical lesion found, will extend stay for appropriate surgery.

### *Indications for Discharge*

1. Discharge when studies are completed unless surgical correction is needed.

### *Services Recommended*

1. Work-Up:
  - a. History: Of pulmonary symptoms such as cough, hemoptysis; asymptomatic cases with x-ray evidence suggesting an intrabronchial lesion.
  - b. Physical Finding: Examination of chest.
  - c. Laboratory: Chest x-ray.

### *Indications for Transfer to Extended Care Facility*

Not usually indicated.

## UROLOGY

### 1. Benign and Malignant Disease of the Prostate Gland

#### *Indications for Admission*

1. Acute urinary retention.
2. Progressive symptoms of prostatism.
  - a. Significant reduction of size and force of urinary stream.
  - b. Hesitancy of significant degree.
  - c. Nocturia two times or greater.
  - d. Chronic recurrent urinary tract infection.
3. Symptomatic or asymptomatic complications of prostatism.



- a. Vesical decompensation with or without overflow incontinence.
- b. Acute or chronic uncontrolled urinary infection.
- c. Vesical calculi.
- d. Azotemia and electrolyte imbalance.
- e. Hemorrhage.
- f. Diverticulum.

#### *Probable Length of Stay*

1. Preparation for surgery: without complications, may be two-four days.
2. Postoperative, uncomplicated.
  - a. Transurethral surgery—four to eight days.
  - b. Suprapubic, perineal, or retropubic surgery—seven to 14 days.
  - c. Vesical diverticulectomy—14-21 days.

#### *Complications That May Extend Length of Stay*

1. Renal failure.
2. Hemorrhage.
3. Uncontrolled infection of urinary tract.
4. Postoperative urinary retention.
5. Wound infection or dehiscence.
6. Urinary fistula and incontinence.
7. Urinary extravasation or incontinence.
8. Epididymitis.
9. Medical complications.

#### *Indications for Discharge*

1. Voiding freely and with adequate control.
2. Absence of significant hematuria.
3. BUN normal or stabilized.
4. Afebrile for at least 48 hours.
5. Regaining of vigor sufficient to permit patient to function satisfactorily.
6. Adequate healing of surgical wound.

#### *Services Recommended*

1. Work-Up:
  - a. History.
  - b. Physical Examination.
  - c. Laboratory: *Recommended*: CBC; urinalysis with stained sediment; blood chemistry profile; acid and alkaline phosphatase (for suspected CA of prostate); *Optional*: Renal function tests; urine culture and sensitivities; blood culture.
  - d. X-ray—*Recommended*: Intravenous pyelogram; chest x-ray. *Optional*: Cystogram; bone survey for suspected CA of prostate.
  - e. Special Procedures—*Optional*: Cystoscopy; needle biopsy (for suspected CA of prostate); medical consultation; cystometric; catheterize for residual urine.

#### *Indications for Transfer to Extended Care Facility*

1. Delayed healing of wound requiring regular attention by Nursing Service.

2. Urinary fistula or incontinence.

3. Indwelling catheter requiring more than routine care. *Note*: The need for prolonged catheter drainage is not alone a reason for care in E.C.F.

4. Insufficient vigor to manage functions in home environment, but can be expected to improve with skilled nursing care.

5. Management of a urinary infection not possible at home.

6. Radiotherapy for carcinoma of prostate under some circumstances.

## **2. Calculi of Kidney, Bladder, and Urethra**

#### *Indications for Admission*

1. All indications for admission with urinary tract infection apply here.
2. Colicky pain not responsive to outpatient treatment.
3. Hematuria associated with colicky pain.
4. Asymptomatic, known to have calculous disease, for evaluation and/or treatment.

#### *Probable Length of Stay*

1. Controlled metabolic studies for calculous disease five to 7 days.
2. With or without cystoscopy: two to three days.
3. Uncomplicated open surgery: six to ten days (postoperative).
4. Vesical calculus, removed by litholapaxy: three days (postoperative).
5. If cystoscopic manipulation or extraction of ureteral stone in uncomplicated cases: two to three days (postoperative).

#### *Complications That May Extend Length of Stay*

1. Sepsis.
2. Draining wound.
3. Chronic renal insufficiency.
4. Pain.
5. Voiding problems.
6. Medical complications.

#### *Indications for Discharge*

1. Lack of sepsis.
2. Satisfactory renal function.
3. Temperature normal for 24 hours.
4. Absence of significant pain and discomfort.
5. No significant drainage from wound.

#### *Services Recommended*

1. Work-Up:
  - a. History.
  - b. Physical Examination.
  - c. Laboratory—*Recommended*: CBC; urinalysis with stained sediment; blood chemistry profile (to include calcium, phosphorous, alkaline phosphatase and uric acid); *Optional*: Renal function tests; serum proteins electrophoresis; urine culture and

sensitivities; controlled metabolic studies for calculous disease.

d. X-ray: Intravenous pyelogram; chest x-ray.

e. Special Procedures: Cystoscopy and retrograde pyelogram.

#### *Indications for Transfer to Extended Care Facility*

1. Continuation of parenteral antibiotic therapy when oral antibiotics are not a reasonable choice.
2. Other factors present, contributing to the infection, which are waiting correction.
3. General debility or chemical imbalance resulting from severe infection which can be expected to improve by supervision of nutrition and hydration.

### **3. Urinary Tract Infection**

#### *Indications for Admission*

1. Patient is acutely ill on presentation as indicated by:
  - a. Presence of sepsis (fever, sweat, prostration, chills).
  - b. Severe symptoms related to urination (extreme frequency or painful urination, incontinent, hematuria).
  - c. Patient too ill to come to physician's office without help.
2. Where obstruction is present as well as infection.
3. When infection is recurrent and patient has not responded to office treatment, planned procedures such as cystoscopy and retrograde pyelograms require hospitalization.
4. Preplanned therapy with drugs which because of their nature and manner of administration require hospitalization.
5. Infection accompanied by renal failure.

#### *Probable Length of Stay*

The expeditious organization and scheduling of diagnostic studies should be a prime consideration in patients admitted specifically for investigation of chronic or recurrent urinary tract infection—within 48-72 hours of admission.

1. Diagnostic admission—three days in adults, five days in children.
2. Therapeutic admission—as determined by previously listed historical criteria.

#### *Complications That May Extend Length of Stay*

1. Fistula.
2. Neoplasm.
3. Congenital anomaly.
4. Obstruction.
5. Resistant infection.
6. Operation.
7. Adverse drug reaction.
8. Medical complications.

#### *Indications for Discharge*

1. Resolution of sepsis.
2. No correctable factors contributing to infection are present.

#### *Services Recommended*

1. Work-Up:
  - a. History and Physical Examination.
  - b. Laboratory: Urinalysis; urine culture and sensitivity; CBC; sedimentation rate.
  - c. X-Ray: IVP; chest x-ray.
2. Treatment:
  - a. Urological evaluation; surgical therapy.
  - b. Medical management:
    1. Antibiotics.
    2. Parenteral fluids.

#### *Indications for Office Treatment*

The patient should not be admitted to the hospital, in general, when none of the above indications are present. It is important to note the following:

1. The patient who is uncomfortable but not septic and can pass urine should be treated as an outpatient.
2. Hematuria, infection, mild temperature elevation, or mild pain alone do not necessarily justify admission unless planned procedures, cystoscopy, and retrograde pyelography require hospitalization.

#### *Indications for Transfer to Extended Care Facility*

1. Continuation of parenteral antibiotic therapy when oral antibiotics are not a reasonable choice.
2. Other factors present, contributing to the infection, which are awaiting correction.
3. General debility or chemical imbalance resulting from severe infection which can be expected to improve by supervision of nutrition and hydration.

### **4. Bladder Tumors**

#### *Indications for Admission*

1. Diagnosis established by biopsy.
2. Suspected bladder neoplasm or urethral neoplasm.
  - a. Vesical obstruction.
  - b. Irritative bladder symptoms.
  - c. Hematuria.
  - d. Urinary tract infection or obstruction.
  - e. Roentgenographic evidence of bladder tumor or urethral neoplasm.
3. Surgical treatment.
  - a. Curative, local, or radical excision.
  - b. Palliative, local excision of lesion with or without urinary diversion.
4. Radiotherapy of lesion if this cannot be safely or reasonably done on an outpatient basis.
5. Medical supportive and palliative treatment in advanced cases.

6. Control of hemorrhage and replacement of serious blood loss.

#### *Probable Length of Stay*

1. Diagnostic studies and biopsy—two to six days.
2. Transurethral resection and fulguration—two to seven days.
3. Partial cystectomy or open fulguration of tumor: 10-17 days.
4. Cystectomy with urinary diversion.
  - a. One stage: 15-30 days.
  - b. Two stage: 14 days (first stage); 14-28 days (second stage).
5. Radiation therapy: undetermined length of stay.
6. Urethral surgery—radical—same as cystectomy.

#### *Complications That May Extend Length of Stay*

1. Renal failure.
2. Hemorrhage.
3. Uncontrolled infection of urinary tract.
4. Postoperative urinary retention.
5. Wound infection or dehiscence.
6. Urethral surgery—radical—same as cystectomy.
7. Urinary extravasation or incontinence.
8. Epididymitis.
9. Medical complications.

#### *Indications for Discharge*

1. Good functional results.
2. Absence of significant hematuria.
3. Afebrile for 48 hours.

4. Restitution of vigor sufficient to permit patient to manage functions in the home environment.

5. Adequate healing of surgical wound.

6. Adequate relief of pain by medications which can be given at home.

#### *Services Recommended*

1. Work-Up:
  - a. History.
  - b. Physical Examination.
  - c. Laboratory: *Recommended*: CBC; urine with stained sediment; blood chemical profile; *Optional*: Renal function tests; urine cytology; urine culture.
  - d. X-ray: Chest x-ray; intravenous pyelogram; *Optional*: Bone survey; retrograde pyelogram; cystogram.
  - e. Special Procedures: Cystoscopy and biopsy.

#### *Indications for Transfer to Extended Care Facility*

1. Delayed wound healing requiring regular treatment by Nursing Service.
2. Urinary fistula or incontinence.
3. Needs parenteral medication for pain relief.
4. Insufficient vigor to manage functions in the home, but which can be expected to improve with skilled nursing care.
5. Indwelling catheter requiring more than routine care. *Note*: The need for prolonged catheter drainage is not alone a reason for care in ECF.
6. Radiotherapy or chemotherapy.

## HOUSE OF DELEGATES

**Dover and Portsmouth Rooms**

**SUNDAY—MAY 7**

**2:15 Registration of Delegates**

**3:00 First Session**

**WEDNESDAY—MAY 10**

**8:00 Registration of Delegates**

**8:30 Second Session**

**Council Meeting and Luncheon at Conclusion of House of Delegates**

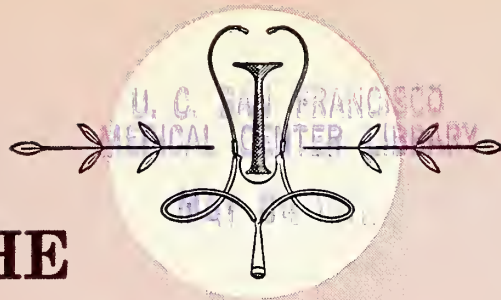
## REFERENCE COMMITTEES

**MONDAY—MAY 8—8:00 A.M.**

**Committee A—Portsmouth Room**

**Committee B—Dover Room**





THE  
Journal  
OF THE  
Kansas  
Medical  
Society





The negative power of undue anxiety  
in congestive heart failure...

This man thinks he can no longer  
take breathing for granted.



Typical of many patients with congestive heart failure, he also suffers from severe anxiety, a psychic factor that may influence the character and degree of his symptoms, such as dyspnea. His apprehension may also deprive him of the emotional calm so important in maintenance therapy.

#### *Aid in rehabilitation*

Specific medical and environmental measures are often enhanced by the antianxiety action of adjunctive Libritabs (chlordiazepoxide). Libritabs can also facilitate treatment of the tense convalescent patient until antianxiety therapy is no longer required. Whereas in geriatrics the *usual daily dosage* is 5 mg two to four times daily, the *initial dosage* in elderly and debilitated patients should be limited to 10 mg or less per day, adjusting as needed and tolerated.

#### *Concomitant use with primary agents*

Libritabs is used concomitantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics, antihypertensives, vasodilators and oral anticoagulants, whenever excessive anxiety or emotional tension adversely affects the clinical condition or response to therapy. Although clinical studies have not established a cause and effect relationship, physicians should be aware that variable effects on blood coagulation have been reported very rarely in patients receiving oral anticoagulants and chlordiazepoxide HCl.

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

**Contraindications:** Patients with known hypersensitivity to the drug.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

**Precautions:** In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

**Adverse Reactions:** Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

**Supplied:** Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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# Call for Help?

## *The Demand for Physician Assistants in Kansas*

**TOM BARANOWSKI, M.A., CHARLES H. ADAIR, Ph.D., and  
ROBERT W. BROWN, M.D.,\*** *Kansas City, Kansas*

### **Introduction**

ONE OF THE MAJOR ISSUES in medical care in the United States is the short supply of physicians to meet the demand. Among the many proposed remedies, the concept of a highly sophisticated "physician assistant" is gaining increased national attention. Within Kansas, the Kansas Medical Society has expressed much interest in this concept and both the University of Kansas Medical Center Department of Human Ecology and the Kansas Regional Medical Program have received federal grants to train such assistants. With these programs going into operation in the fall of 1971, the Kansas Medical Society desired information as to how such assistants might be accepted and used by physicians in Kansas.

A survey questionnaire was designed to determine the number of physician assistants wanted by doctors in Kansas and the tasks which these assistants should be given. This questionnaire was based on questions used in two other physician surveys in Missouri<sup>1</sup> and Wisconsin,<sup>2</sup> in order to permit meaningful comparisons of the obtained data. The questionnaire was mailed to the 1,827 in-state members of the Kansas Medical Society, and a 72 per cent rate of response was obtained.

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\* This study was sponsored by the Kansas Medical Society and cosponsored and funded by the Kansas Regional Medical Program, Robert W. Brown, M.D., Director.

The authors are all staff members of the Kansas Regional Medical Program.

It was found that at least 370 full-time physician assistants would presently be employed in Kansas if available. The total number wanted is probably considerably larger since this figure does not take in-

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**A survey of members of the Kansas Medical Society shows a demand for a minimum of 370 full-time physician assistants in Kansas. Physician assistants would be assigned a wide range of tasks depending on the type of practice and the personal preferences of their employing physicians. Some physicians suggested that this concept was not in the least bit new.**

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to account the demand from physicians who failed to respond to the questionnaire, nor does it include the number of part-time assistants who presently could be placed in physicians' offices. A wide variety of assistants would be hired; "general" physician assistants seemed to be in most demand. The responding physicians would prefer to hire as their assistants nurses retrained for expanded assistant roles, rather than ex-corpsmen or newly trained personnel. Seventy per cent believed that the addition of an assistant could qualitatively or quantitatively improve their practices.

This report considers in some detail the following four major questions:

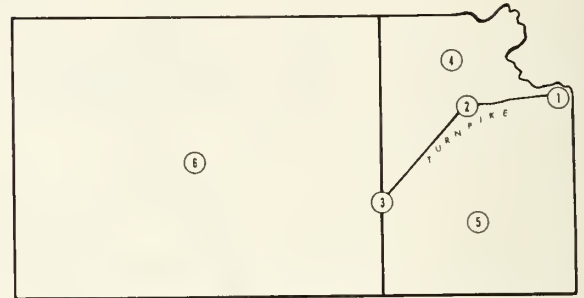
1. Is the study sample representative of all doctors in Kansas?
2. What type of assistants are wanted by Kansas doctors?
3. What are the characteristics of those doctors most likely to hire an assistant?
4. How do Kansas doctors respond to the current issues concerning physician assistants?

### The Representativeness of the Sample

To check whether the obtained sample was representative of doctors in the state as a whole, comparisons were made of the survey data with information extracted from the 1970 KMS membership directory. Of the 553 questionnaires analyzed, 230 came from group practitioners, 298 from solo doctors, 24 from KMS members who are not actively practicing medicine (mostly medical students), and one from a doctor who could not be classified. (The definition of "group" for the purpose of this survey does not conform to usual, more restricted notions of "group practice." The survey data for physician "groups," therefore, should not be interpreted as being exclusively indicative of physicians whose practice exemplifies what is commonly defined as "group practice.")

The KMS membership directory lists 1,827 members residing in the state. From answers to several of the survey questions, it was estimated that the 553 returned questionnaires account for 1,314 KMS members. This represents a 72 per cent sample of KMS members, which is an unusually good rate of return for this type of mailed questionnaire. In order to estimate the reliability of this sample as representative of all KMS in-state members, three comparisons were made.

First, the geographic distribution of the physicians was checked. The questionnaire arbitrarily broke the state into six regions (*Figure 1*).



*Figure 1.* The six reporting areas in Kansas.

- |                     |                  |
|---------------------|------------------|
| 1. Kansas City Area | 5. Southeast     |
| 2. Topeka Area      | 6. West          |
| 3. Wichita Area     | 7. Out of Kansas |
| 4. Northeast        |                  |

*Table I* distributes the respondents and the KMS membership into these six regions. Geographically, the sample of respondents seems to be representative of the entire in-state KMS membership. That is to say, the physicians from any one region of the state have not been over- or under-represented in this study.

Second, the study sample and the KMS membership were compared as to the size of their resident communities. *Table II* displays the distribution of the survey respondents and the total KMS membership by size of their home town. Again, it can be seen that no severe differences occur between the percentages of the respondents and the percentages of the total KMS membership in each category. It is also interesting to note that approximately 50 per cent of all doctors in the state live within three urban areas.

TABLE I  
DISTRIBUTION OF SURVEY RESPONDENTS AND ALL KMS IN-STATE MEMBERS BY REGION

Region	Survey Respondents						Total KMS In-State Members	
	TOTAL		GROUP PRACTICE		SOLO PRACTICE		N	%
	N	%	N	%	N	%		
Kansas City area	119	23	53	23	66	22	347	19
Topeka area	50	9	22	10	28	9	210	11
Wichita area	116	22	49	21	67	23	344	19
Northeast	46	9	18	8	28	9	204	11
Southeast	64	12	23	10	41	14	287	16
West	131	25	65	28	66	22	435	24
Urban (K.C., Topeka, Wichita)	285	54	124	54	161	54	901	49
Rural (northeast, southeast, west)	241	46	106	46	135	46	926	51



TABLE II  
DISTRIBUTION OF SURVEY RESPONDENTS AND TOTAL KMS IN-STATE MEMBERS BY  
SIZE OF RESIDENT COMMUNITY

Community Size	Survey Respondents						Total KMS In-State Members	
	TOTAL		GROUP PRACTICE		SOLO PRACTICE		N	%
	N	%	N	%	N	%		
Under 2,000 .....	47	9	7	3	40	14	149	8
2,000-5,000 .....	57	11	28	13	29	10	186	10
5,000-10,000 .....	27	5	18	8	9	3	83	5
10,000-25,000 .....	93	18	40	18	53	18	304	17
25,000-50,000 .....	56	11	29	13	27	9	204	11
50,000-100,000 .....	232	45	100	45	132	46	901	49
Rural (under 50,000) .....	280	55	122	55	158	54	926	51
Urban (over 50,000) .....	232	45	100	45	132	46	901	49

Third, the age distribution of the survey respondents and all KMS in-state members were compared. This comparison uncovered a response bias, which may bias the findings reported below. *Table III* displays the age distribution of the KMS members who responded to this survey, of the KMS members who responded to another survey, and of the total KMS in-state membership. It is obvious that the sample of physicians responding to this physician-assistant survey over-represents (by a factor of 2) the KMS physicians under 40 years of age, and severely under-represents (by a factor of 3) the older members, those physicians over 70 years of age.

### Two Types of Assistants and the Demand for Each

This study was concerned with determining the demand for two different types of physician assistants. For the sake of clarity, each of the two types was defined on each questionnaire. Below is a verbatim reproduction of these definitions.

In order to reduce confusion as to what a physician assistant or nurse clinician is, the Board of Medicine of the National Academy of Sciences has defined three general types of these assistants that are presently being trained and evaluated across the country. To clarify what is meant by the term in this questionnaire, two of these definitions (Types A and B) will be asked to answer identical questions regarding each.

(The definitions are taken from *New members of the physician's health team: physician's assistants*, a report of the Ad Hoc Panel on New Members of the Physician's Health Team of the Board of Medicine of the National Academy of Sciences, 1970.)

#### *The Type A Assistant.*

The Type A assistant is capable of approaching the patient, collecting historical and physical data, organizing these data, and presenting them in such a way that the physician can visualize the medical problem and determine appropriate diagnostic or therapeutic steps. He is also capable of assisting the physician by performing diagnostic and therapeutic procedures and coordinating the roles of other more technical assistants. While he functions under the general supervision and responsibility of the physician, he might, under special circumstances and under defined rules, per-

TABLE III  
AGE DISTRIBUTIONS OF KANSAS  
PHYSICIANS RESPONDING TO TWO  
STATE-WIDE SURVEYS AND OF THE  
TOTAL KMS IN-STATE MEMBERSHIP

Age	P.A. Survey* Re- spondents	Lewis Survey† Re- spondents	Total KMS In-State Mem- bership
Less than 40 ....	28.7%	18.6%	15%
41-50 .....	31.3	33.3	34
51-60 .....	24.9	29.4	24
61-70 .....	11.3	13.9	15
Greater than 70	3.8	4.8	12

\* The age categories used in this survey were: less than 35, 36-45, 46-55, 56-65, 66-75, and greater than 75. To arbitrarily arrive at the reported distribution, the number of respondents in each of the above categories were divided by two and added to form the reported categories.

† These data come from a 1968 study of the membership of the Kansas Medical Society by Dr. Charles Lewis, now of UCLA.

form without the immediate surveillance of the physician. He is, thus, distinguished by his ability to integrate and interpret findings on the basis of general medical knowledge and to exercise a degree of independent judgment.

The curriculum of a program training Type A assistants should include adequate instruction on the basic sciences to insure understanding of patients, their ailments, and the diagnostic and therapeutic responses to those ailments. Thus, students must be given adequate exposure to physician instructors and to clinical training essentially the same as that given medical students. The Type A assistant will generally have four types of training: (1) basic general education, (2) basic scientific education, (3) general clinical training, (4) specialized clinical training in some aspect or aspects of medical practice.

*The Type B Assistant.*

The Type B assistant, while not equipped with general knowledge and skills relative to the whole range of medical care, possesses exceptional skill in one clinical specialty or, more commonly, in certain procedures within such a specialty. In his area of specialty, he has a degree of skill beyond that normally possessed by a Type A assistant and perhaps beyond that normally possessed by physicians who are not engaged in the specialty. Because his knowledge and skills are limited to a particular specialty, he is less qualified for independent action. An example of this type of assistant might be one who is highly skilled in the physician's functions associated with a renal dialysis unit and who is capable of performing these functions as required.

Because of the different nature of their activity, requiring less independence, the general education and clinical background of Type B assistants, of course, need not be as extensive as is suggested for Type A above.

When the Kansas physicians responded as to whether they had needs for either type of assistant in their practice, 58 per cent of the groups and 67 per cent of the soloists reported a need for Type A assistants, and 26 per cent of the groups and 18 per cent of the soloists reported a need for Type B assistants. A major shrinkage was noted, however, in the number of physicians and physician groups expressing an interest in hiring either type. *Table IV* reports these percentages. From comments written on the questionnaires, the difference between the number of physicians reporting a need for assistants (*e.g.*, two-thirds of the soloists expressed a need for a Type A assistant) and the number willing to hire them (*e.g.*, one-fourth of the soloists expressed a willingness to hire a Type A assistant) can probably

TABLE IV  
PERCENTAGES OF PHYSICIAN  
RESPONDENTS CATEGORIZED BY TYPE  
OF PRACTICE (SOLO OR GROUP)  
EXPRESSING A NEED FOR AND A  
WILLINGNESS TO HIRE TYPES A AND B  
PHYSICIAN ASSISTANTS

Survey Questionnaire Items	Group Practice Respondents	Solo Practice Respondents
Type A assistant meeting a need (per cent yes) . . . . .	58	67
Type B assistant meeting a need (per cent yes) . . . . .	26	18
Willing to employ type A full- time (per cent yes) . . . . .	38	26
Willing to employ type A part- time (per cent yes) . . . . .	7	12
Willing to employ type B full- time (per cent yes) . . . . .	23	13
Willing to employ type B part- time (per cent yes) . . . . .	4	7

be explained by the legal and insurance (malpractice) issues that have arisen with regard to this new category of medical practitioners. When and if these questions are resolved, Kansas physicians will undoubtedly express greater interest in hiring physician assistants.

The responses of KMS members as to whether a Type A physician assistant might meet a need in their offices contradicts in part the comparable results obtained in the survey of Missouri physicians. Stoneman reports that 45 per cent of the solo practitioners and 62 per cent of the group practitioners answered affirmatively. The percentage of group respondents reporting such a need is similar, but the percentage of soloists differs markedly. The greater expressed need for physician assistants by Kansas than by Missouri soloists cannot be readily explained by the data collected in this study.

The survey respondents were asked to indicate how many of each of 11 kinds of Type A assistants they would be interested in hiring. *Table V* reports the number of each kind of Types A and B physician assistants that were selected. Overall, the groups indicated an interest in 188, the soloists in 94, for a total demand for 282 Type A physician assistants. Groups of physicians would hire 109 Type B assistants, and soloists would hire 52, for a total demand for 161 Type B assistants. The last column in *Table V* reflects redundancies, *i.e.*, those categories of assistants for which the responding physicians reported a desire for the same number and kind of both Types A and B. These were subtracted from the total demand, since it is doubtful

TABLE V

NUMBERS OF PHYSICIAN PRACTICES THAT WOULD EMPLOY VARIOUS KINDS OF PHYSICIAN ASSISTANTS CLASSIFIED BY TYPE OF ASSISTANT, TYPE OF PRACTICE, AND NUMBER OF ASSISTANTS WANTED

Kind of Assistant	Type A Assistant						Type B Assistant						Redun- dancies in Demand for Types A and B Physicians Assistants
	GROUP PRAC- TICES THAT WOULD HIRE			SOLO PRAC- TICES THAT WOULD HIRE			GROUP PRAC- TICES THAT WOULD HIRE			SOLO PRAC- TICES THAT WOULD HIRE			
	1	2	>2	1	2	>2	1	2	>2	1	2	>2	
General physicians assistants .....	32	13	6	39	5	1	Not Applicable						—
Pediatric physicians assistants .....	14	1	—	2	—	—	Not Applicable						—
Emergency assistants .....	7	1	—	1	—	—	Not Applicable						—
Anesthesia assistants .....	1	1	1	—	—	1	5	1	1	4	—	1	6
Neurological assistants ....	1	1	—	1	—	1	1	1	1	1	—	1	4
Pulmonary assistants .....	2	1	1	2	—	—	2	1	1	4	—	—	4
Obstetrical assistants .....	6	1	1	2	—	—	1	1	1	4	2	—	13
Ophthalmic assistants .....	3	1	1	5	2	2	5	—	—	2	—	—	3
Orthopedic assistants .....	2	—	—	1	—	—	4	2	—	4	—	—	5
Nephrological assistants ...	—	1	—	—	—	—	1	2	—	—	—	—	2
Cardiology assistants .....	4	1	—	1	—	—	6	2	—	3	—	—	5
Other .....	10	5	3	8	1	—	19	2	7	17	1	—	31
Totals .....	82	54	52	62	16	16	44	24	41	39	6	7	73

that any particular physician would hire both Type A and B assistants having the same specialty.

### The Characteristics of Physicians

#### Hiring an Assistant

Several analyses were performed to identify characteristics (e.g., size of community in which the doctor practices, an urban vs. a rural practice, age of physician, economic status of the community, size of practice, etc.) that differentiate doctors who would hire assistants from those who would not. The results of these analyses are reported here.

Stoneman reports finding in the Missouri physician data a close correlation between the percentage of "willing to hire" responses and the number of non-physician employees already working for a given practice. The obtained correlation for the Kansas data between the number of personnel already employed by a physician and the number of Type A assistants a physician would hire is .43. This supports the Missouri findings.

Table VI summarizes information about the demand for Type A physician assistants that can be associated with medical practices of various sizes. The fourth row on the table indicates the percentages of practices of specific sizes which report that they would hire one or more Type A assistants. It reveals

that there is a positive relationship between the size of medical practice and the percentage of the practices in which an assistant would be employed. The fifth row of the table indicates the mean number of Type A assistants that are demanded by medical practices of specific sizes. It can be seen that larger practices on the average would hire more than smaller practices.

A correlation of .50 was obtained when the relationship between the number of physicians employed and the number of assistants that would be hired by each practice was computed. It is interesting to note in the sixth row of Table VI, however, that there is a negative relationship between the average number of assistants that would be hired per practice physician and the number of physicians in the practice. The greatest average demand for Type A physician assistants on a per doctor basis is associated with two-member groups, the lowest average demand per doctor being associated with groups having nine or more members. This is pertinent to the urban-rural comparisons reported below. Although urban areas have more doctors than rural areas, the urban areas also have more group practices. These factors tend to equalize the demand for physician assistants associated with urban and rural areas.



TABLE VI  
VARIOUS INDICES OF THE DEMAND FOR TYPE A PHYSICIAN ASSISTANTS  
ASSOCIATED WITH PHYSICIANS AND PHYSICIAN PRACTICES GROUPED BY SIZE  
OF PRACTICE

<i>Demand Measures</i>	<i>Size of Practice</i>						
	SOLO	2 MEMBERS	3 MEMBERS	4-5 MEMBERS	6-8 MEMBERS	9-14 MEMBERS	15 OR MORE MEMBERS
Number of type A assistants that would be hired* . . . . .	99	37	36	21	25	24	24
Number of practices that would hire type A physician assistants . . . . .	78	29	20	11	8	9	6
Total number of surveyed practices . . . . .	298	98	50	33	17	18	10
Per cent of surveyed practices that would hire type A physician assistants . . . . .	26	30	40	33	47	50	60
Mean number of type A physician assistants hired per practice . . . . .	.33	.38	.72	.64	1.47	1.33	2.40
Mean number of assistants hired per physician . . . . .	.33	.64	.24	.14	.21	.12	.16

\* The number of assistants here is computed from a question in which the last category is "four or more." This category was counted as four for the purpose of computing the values on this table and therefore undervalues the demand of respondents asking for more than four physician assistants.

*Table VII* compares the number and percentages of group and solo practices surveyed who would hire Type A assistants when these practices are grouped by the age of the physicians, the socio-economic status of the patient population, the location of practice within the state, and the size of community in which the practice is located. Since group practices cannot be neatly categorized by the age of their members—because any one group usually has physicians belonging to more than one category—attention can be paid only to solo age data. The age group most likely to hire among the soloists is from 36 to 45. In fact, there seems to be a linear trend: the younger the physician, the more likely he is to hire an assistant. It is interesting to note that only one of the 39 physicians over 66 years of age indicated an interest in hiring a Type A assistant. It also makes sense that doctors below 35 years of age have not established themselves to the point where they require or can afford an assistant.

The second panel of *Table VII* indicates that a physician's perception of the socio-economic status of his patient population does not seem to affect whether he will hire an assistant. There are too few cases in the "poor" patient classification category to make the percentage in that category statistically reliable.

The third panel of *Table VII* shows that the

southeast section of the state is the area of the state with the greatest demand by groups for assistants, while Topeka rates highest for soloists. The difference in percentage between urban (Kansas City, Topeka, Wichita) and rural (Southeast, Northeast, West) willing to hire a Type A assistant is negligible.

As displayed in the fourth panel of *Table VII*, the data show no systematic effect in the percentage of physicians hiring a Type A assistant that can be associated with the size of the community in which the practice is located. Size of town seems to make no difference to either soloist or group physicians in their interest to hire assistants. This finding also differs from the Missouri survey results, which found that the percentage of practices willing to hire assistants increased with the size of the practice community, from 35 per cent in towns of less than 2,000 people to 50-60 per cent in the larger communities. While the percentage of practices who would employ assistants in the smallest communities in both states is very similar, the percentage is greater among the larger community practices in Missouri than in Kansas. This difference cannot be explained by the data collected in this study. In any case, the Kansas physician who, on the basis of this survey, is statistically most likely to hire a Type A assistant, is a member of a two-man group, 36 to 45 years of age, and lives in the Topeka area.

TABLE VII

THE NUMBER AND PERCENTAGE OF GROUP AND SOLO PRACTICES THAT WOULD HIRE TYPE A ASSISTANTS CLASSIFIED BY AGE OF PHYSICIAN, SOCIO-ECONOMIC STATUS OF PATIENT POPULATION, AND SIZE AND LOCATION OF PRACTICE COMMUNITY

	Groups			Solo		
	NUMBER HIRING	TOTAL NUMBER	PERCENT HIRING	NUMBER HIRING	TOTAL NUMBER	PERCENT HIRING
Age of Physician						
Under 36 .....				5	16	31
36-45 .....				22	55	40
46-55 .....	NA*	NA*	NA*	28	105	27
56-65 .....				20	76	26
66-75 .....				—	29	—
Over 75 .....				1	10	10
Socio-economic status of patient population						
Well-to-do .....	3	7	43	0	6	—
Middle Income .....	45	119	38	39	156	25
Mixed Economic .....	28	79	35	24	88	27
Low Income .....	6	14	43	12	34	35
Poor .....	2	3	67	2	6	33
Location of practice						
Kansas City Area .....	19	53	36	16	66	24
Topeka Area .....	10	22	45	13	28	46
Wichita Area .....	18	49	37	16	67	24
Northeast .....	6	18	33	6	28	21
Southeast .....	12	23	52	11	41	27
West .....	19	65	29	15	66	23
Size of practice community						
Less than 2,000 .....	3	7	43	13	40	33
2,000- 5,000 .....	8	28	29	8	29	28
5,000-10,000 .....	4	18	22	3	9	33
10,000-25,000 .....	18	40	45	13	53	25
25,000-50,000 .....	9	29	31	5	27	19
More than 50,000 .....	41	100	41	38	132	29

\* Groups can have members across the varying age categories. This complication obviates the possibility of a meaningful analysis of the demand of the "group" physicians classified by their ages.

### Physician Attitudes Regarding Physician Assistants

The physicians who indicated an interest in hiring either type of physician assistant were asked what type of health care personnel they would prefer to have trained to be their assistants. In both cases, retraining of nurses was preferred to the retraining of ex-medical corpsmen, or the training of new health professionals. This preference, however, is much weaker for Type B than for Type A assistants (*Table VIII*).

*Table IX* reports the salaries which physician assistants could expect to receive from the survey respondents. On the average, group practices would pay higher than soloists. The mean salary for a Type A assistant is \$363 per annum higher than the mean salary for Type B assistants. Urban practices would pay on the average \$304 per annum more to

physician assistants than rural practices. As the Missouri questionnaire also found, the bulk of the responses regarding the appropriate salary for a physician assistant from those physicians interested in hiring an assistant fell within the \$6,000 to \$10,000 per annum salary range.

The questionnaire sought to determine roughly the degree to which Kansas physicians believed the hiring of assistants would alter the nature of their practices. *Table X* gives the distributions of the responses of the physicians who would hire a physician assistant according to how much they felt an assistant might enable them to increase the number of patients seen in their practices. Of those willing to hire a Type A physician assistant, over 80 per cent felt they would increase their number of patients, and over 50 per cent expected they would be able to take care of 16 per cent or more patients af-

TABLE VIII  
PHYSICIAN RESPONDENTS WHO WOULD HIRE PHYSICIAN ASSISTANTS CATEGORIZED ACCORDING TO THE TYPE (GROUP-SOLO) AND LOCATION (URBAN-RURAL) OF THEIR PRACTICES AND THE EDUCATIONAL BACKGROUND THEY WOULD PREFER FOR TYPE A AND B PHYSICIAN ASSISTANTS

Preferred Educational Background of Physician Assistant	Type A Physician Assistant				Total for Type A	Type B Physician Assistant				Total for Type B
	GROUP PRACTICE		SOLO PRACTICE			GROUP PRACTICE		SOLO PRACTICE		
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural	
A nurse who has received training .....	22	17	28	20	87	13	7	9	5	34
A former medical corpsman who has received training	13	10	16	8	47	This Category Not Used for Type B				
A new health professional who has received training	8	3	8	7	26	14	4	10	13	41
No preference .....	17	15	15	15	62	15	13	20	14	62

ter hiring an assistant. Those doctors expressing an interest in Type B assistants expected less increased capacity from hiring this type of assistant than those interested in hiring Type A assistants. This finding of physician expectations of increased practice capacity after hiring a Type A assistant agrees fully with the Missouri findings.

Table XI reports the expectations of resultant qualitative changes in their practices on the part of the physicians who express an interest in hiring Type A and B assistants. Thirty per cent expected no qualitative changes in their practices, but 39 per cent expected to be able to increase their home or hospital calls as a result of hiring a Type A assistant. Considerable expectations were also expressed of increased office procedures and office hours. Stoneman found in the Missouri study that the two most frequently expected categories of qualitative change

in office practices in the minds of those who would hire an assistant were an increase in the total office hours and an increase in the kinds of procedures. These are very similar results to those reported here.

One of the thornier questions concerning the utilization of physician assistants is the definition of the legal accountability of the physician assistant. Of the many possibilities of legal accommodation to the question of accountability, the questionnaire outlined three broad alternatives as an initial sampling of medical opinion. Table XII classifies the physician responses on this issue according to the type of practice of the physician (group or solo) and their willingness to hire a Type A assistant full-time, part-time, or not at all. The majority of respondents clearly opt for flexibility in developing the role of physician assistants without premature legal constraints. It is interesting to note that this preference

TABLE IX  
PHYSICIAN RESPONDENTS WHO WOULD HIRE PHYSICIAN ASSISTANTS CATEGORIZED ACCORDING TO THE TYPE (GROUP-SOLO) AND LOCATION (URBAN-RURAL) OF THEIR PRACTICES AND THE LEVEL OF SALARY THEY WOULD GIVE TYPE A AND B PHYSICIAN ASSISTANTS

Expected Salary Level for Physician Assistants	Type A Physician Assistant				Total for Type A	Type B Physician Assistant				Total for Type B
	GROUP PRACTICE		SOLO PRACTICE			GROUP PRACTICE		SOLO PRACTICE		
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural	
Under \$6,000 .....	3	6	7	10	26	3	6	7	10	26
\$6,000-\$ 8,000 .....	17	12	25	16	70	18	4	12	12	46
\$8,000-\$10,000 .....	15	13	18	13	59	4	2	5	2	13
\$10,000-\$12,000 .....	11	13	12	8	44	6	5	5	1	17
\$12,000-\$14,000 .....	2	1	—	1	4	3	4	—	—	7
\$14,000-\$16,000 .....	3	—	—	—	3	2	—	—	—	2
\$16,000-\$18,000 .....	—	—	—	—	—	—	—	—	—	—
Mean salary .....	\$9,098	\$8,733	\$8,242	\$8,125	\$8,534	\$8,861	\$9,000	\$7,793	\$6,920	\$8,171



TABLE X

PHYSICIAN RESPONDENTS WILLING TO HIRE PHYSICIAN ASSISTANTS CATEGORIZED ACCORDING TO THE TYPE (GROUP-SOLO) AND LOCATION (URBAN-RURAL) OF THEIR PRACTICES AND THE LEVEL OF INCREASED PATIENT CAPACITY EXPECTED IN THEIR PRACTICES AS A RESULT OF HIRING TYPE A OR B ASSISTANTS

	<i>Type A Physician Assistant</i>				<i>Total for Type A</i>	<i>Type B Physician Assistant</i>				<i>Total for Type B</i>
	GROUP PRACTICE		SOLO PRACTICE			GROUP PRACTICE		SOLO PRACTICE		
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural	
Not at all .....	11	6	9	6	32	10	7	7	10	34
1%-15% .....	18	16	22	12	68	17	9	8	9	43
16%-30% .....	19	19	21	21	80	5	6	11	8	30
31%-50% .....	3	3	5	6	17	2	—	4	—	6
More than 50% .....	3	1	1	—	5	2	—	2	1	5
Estimated average increase (per cent) .....	16	17	16	18	16	12	10	18	11	13

for flexibility is most pronounced for the groups and soloists who would not hire an assistant.

Finally, all survey respondents were asked to indicate which procedures they would allow physician assistants to perform. A list of 19 common medical activities were presented and each respondent was

asked to indicate whether he would allow an assistant to perform each activity by using either of three answers: yes, depends, or no. These data are reported in *Table XIII*. In general, Kansas physicians seem to feel that assistants should not be allowed to do a pelvic in a physical examination, perform deliv-

TABLE XI

PHYSICIAN RESPONDENTS WILLING TO HIRE PHYSICIAN ASSISTANTS CATEGORIZED ACCORDING TO THE TYPE (GROUP-SOLO) AND LOCATION (URBAN-RURAL) OF THEIR PRACTICES AND THE QUALITATIVE CHANGES THEY EXPECT IN THEIR PRACTICES AS A RESULT OF HIRING TYPE A OR B ASSISTANTS\*

	<i>Type A Physician Assistant</i>				<i>Total</i>	<i>Type B Physician Assistant</i>				<i>Total</i>
	GROUP PRACTICE		SOLO PRACTICE		<i>for</i>	GROUP PRACTICE		SOLO PRACTICE		<i>for</i>
	Urban	Rural	Urban	Rural	<i>Type A</i>	Urban	Rural	Urban	Rural	<i>Type B</i>
No substantial change . . . .	18	17	14	16	65	21	9	8	12	50
Increase geographic coverage of the practice . . . . .	7	10	8	16	41	3	6	5	3	17
Increase total hours the of- fice would be open . . . . .	14	7	24	33	78	4	3	11	7	25
Increase kinds of procedures which would be carried out . . . . .	14	13	16	18	61	14	5	12	9	40
Broaden age distribution of patients cared for . . . . .	2	2	2	4	10	1	2	2	2	7
Increase sites where practice is located, <i>e.g.</i> , additional offices, special clinics, etc.	5	6	5	8	24	2	5	3	2	12
Increase home, nursing home, and hospital calls .	17	20	22	22	81	7	6	6	8	27
Other . . . . .	8	10	15	6	39	This Category Not Used for Type B				

\* Each respondent could check as many of these qualitative changes as he felt would apply in his particular case. Thus, each category of response should be weighted by the total number of people answering this question. With this in mind, 100 groups and 114 soloists answered this question for the Type A assistants. Fifty-seven groups and 56 soloists answered this question for the Type B responses.

TABLE XII

PHYSICIAN RESPONSES REGARDING PREFERRED MEDICAL PRACTICES ACT  
CATEGORIZED BY TYPE OF PRACTICE (GROUP-SOLO) AND DEGREE OF WILLINGNESS  
TO HIRE A PHYSICIAN ASSISTANT (FULL-TIME, PART-TIME, NOT AT ALL)

<i>Medical Practices Act Preferences</i>	<i>Group</i>			<i>Solo</i>			<i>Total</i>
	FULL-TIME	PART-TIME	NOT AT ALL	FULL-TIME	PART-TIME	NOT AT ALL	
1. One that clearly specifies the procedure and conditions under which a physician assistant can practice	18	3	28	20	7	38	114
2. One that includes the category of physician assistant as an exception to the act, allowing candidates to be certified simply as "prepared to assist MD's" . . . . .	22	4	6	19	9	12	72
3. One that does not refer explicitly to physician assistants until the role is more adequately tested and established . . . . .	27	3	59	24	10	68	191
4. Other . . . . .	3	—	13	2	1	8	27

eries, or administer anesthetics. More favorable physician attitudes were expressed regarding the appropriateness of an assistant doing preliminary histories, technical procedures, preventive and patient education, and providing chronic disease care to non-hospitalized patients. Most of these items came from the Wisconsin survey, and the Wisconsin results appear in *Table XIII*. For some reason, the percentage of Wisconsin "no response" responses was very low, which makes it difficult to compare directly the Wisconsin and Kansas results. This may in part be due to the different set of instructions utilized in the Kansas and Wisconsin studies to elicit this information from the respondents.

Since the data are not directly comparable, positive to negative (P/N) response ratios were devised for each clinical activity that was presented to the Kansas and Wisconsin physicians. A rank test on these ratios showed no significant differences between the Kansas and Wisconsin responses. The use of positive to negative ratios for this statistical test assumes that the Kansas physicians providing "no response" responses would distribute themselves as the obtained scores, if they were forced to make a response. In a sense, this is a reliability check on these items: The proportion of the doctors in the Kansas sample endorsing the specific clinical activities for delegation to physician assistants is almost exactly the same as the corresponding endorsements from Wisconsin physicians.

Several doctors wrote accompanying notes stating that they have used physician assistants for 20 years or more. They stated that it has been necessary, especially in western Kansas practices, to train nurses to assist in handling an otherwise overwhelming patient load. Several physicians thus disputed the originality of the concept of physician assistant. Alto-

gether, 88 physicians gave their names as being willing to participate in the training of physician assistants in Kansas.

### Summary

This survey has found a demand for at least 370 full-time physician assistants in the state of Kansas. This figure does not include the demand from the portion of KMS membership (28 per cent) who failed to return a questionnaire, nor does it take into account the demand for part-time assistants. In general, physicians prefer nurses retrained as physician assistants rather than retrained corpsmen or newly trained others. They generally felt that physician assistants could both quantitatively and qualitatively increase their practices. Finally, there seemed to be little consensus as to what duties are appropriate for physician assistants. Instead, many physicians seem to have their own prescribed set of duties that they feel do not require their expertise and which they would like to delegate to an assistant under their supervision.

### Acknowledgment

The authors want to thank Mr. Ronald Greenhagen, and the Data Processing staff of KRMP, for their aid in the computer analysis of the returned questionnaires. The authors also want to express their appreciation to Mrs. Sharon Chace and Mrs. Barbara Stapleton, without whose dedicated service this study could not have been completed.

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1. Stoneman, William, III: Missouri doctors and the physician assistant. *Mo. Med.*, September, 1971.
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TABLE XIII

COMPARISON OF RESULTS OF KANSAS AND WISCONSIN PHYSICIAN SURVEYS REGARDING THE DEGREE ("YES," "DEPENDS," "NO") TO WHICH PHYSICIANS SHOULD DELEGATE SPECIFIED CLINICAL ACTIVITIES TO PHYSICIAN ASSISTANTS

<i>Clinical Activity</i>	<i>Percentages of Kansas Physicians</i>				<i>Percentages of Wisconsin Physicians Responding</i>			
	YES	DEPENDS	NO	NO RESPONSE	YES	DEPENDS	NO	NO RESPONSE
Working as an OR surgical assistant .....	49	15	7	28	69	18	11	3
Doing preliminary histories .....	56	10	9	25	60	16	22	2
Doing some portions of the physical examination (including pelvic) .	12	20	42	27	19	17	63	2
Doing some portions of the physical examination (excluding pelvic) .	30	23	19	28	NA	NA	NA	NA
Identifying and ordering indicated laboratory and radiological tests .	24	23	26	27	NA	NA	NA	NA
Making a preliminary judgment as to whether a physician is needed	38	24	12	26	41	33	23	3
Doing technical procedures only (IVs, GIs, catheterizations, etc.)	61	9	5	26	68	16	13	4
Doing highly specialized procedures of a complex nature, e.g., kidney dialysis .....	16	33	23	28	NA	NA	NA	NA
Doing simple emergency room procedures, e.g., suture lacerations, extract foreign bodies .....	33	25	15	26	21	23	53	3
Applying and removing casts .....	31	25	15	28	NA	NA	NA	NA
Giving anesthetics in routine cases	14	22	35	28	8	14	76	3
Providing routine postoperative care	24	27	21	28	29	24	45	3
Doing routine prenatal checkups ..	36	20	14	30	33	20	43	5
Doing uncomplicated deliveries ...	10	22	37	31	12	16	69	4
Doing routine "well baby" follow-ups, including immunization ....	36	21	13	29	32	22	41	4
Prescribing therapeutic regimes under supervision of a physician ..	25	23	23	28	NA	NA	NA	NA
Providing chronic disease care to nonhospitalized patients according to instructions of attending physician .....	49	17	6	27	NA	NA	NA	NA
Preventive and patient education ..	57	12	5	26	NA	NA	NA	NA
Family counselling and support ..	35	23	15	27	NA	NA	NA	NA

### KMS MEMBERSHIP DIRECTORY—1972

The 1972 Membership Directory will be printed in July. It would be helpful if you would check your listing in the 1971 directory. If the information is incorrect, or if you have recently become a member of the Kansas Medical Society and were not listed last year, please notify the Society office in Topeka.

Membership listings include: name, address, telephone number, year of birth, sex, medical school, year of license and specialty.

Corrections or additions should be sent to the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.



# Diaphragmatic Rupture

## *Spontaneous Postoperative Rupture of the Left Diaphragm in a Psychiatric Patient*

A. N. PELLEGRINI, M.D., F.A.C.S.,\* and

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SPONTANEOUS RUPTURE of the diaphragm is practically non-existent in the surgical literature. We were able to find only two such reports: one by Salomon *et al.*,<sup>1</sup> in 1969, and the other by Stone *et al.*,<sup>2</sup> in 1970. In all other reported instances of herniations through the diaphragm a traumatic or other specifically related etiology is usually well documented.<sup>3-7</sup> The sliding hiatal hernias and the congenital hernias need not be considered in this presentation.

Our case is significant because of absence of apparent causes, the timing of perforation, the ill-defined initial symptoms, and the type of patient in which spontaneous hernia developed.

### Case Report

A 32-year-old male psychiatric patient was transferred for surgery of peptic duodenal ulcer, penetrating and resistant to treatment. The psychiatric problem had been manifested by periods of deep emotional distress and tension, leading to excessive alcoholic drinking and possible misuse of drugs. Otherwise, the patient presented himself as a reasonably good surgical risk. Preoperative chest and upper digestive tract x-ray studies had shown a normal diaphragm (*Figure 1*). Under general endotracheal anesthesia, the patient underwent bilateral subdiaphragmatic truncal vagotomy and Heineke-Mikulicz pyloroplasty. The postoperative course was characterized by marked anxiety and tension. On the second day after the surgery, the patient repeatedly complained of mild left chest pain and some shortness of breath. Apparently this pain had been of acute onset, and remained localized to the anterolateral region of the left chest. There were no dramatic changes in vital signs. The symptoms responded readily to analgesics. However, it was initially difficult to differentiate this man's objective symptoms from his habitual tension and anger.

Chest x-ray films obtained at bedside that day revealed marked elevation of the left diaphragm and distention of the gastric fundus (*Figure 2*). Our thought at that time was of possible atelectasis or

infarct of the left lung. Elevation of the left diaphragm was also thought to be due to the distended postvagotomy stomach.

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**A first case of spontaneous rupture of the left diaphragm in the early postoperative period is presented. The most significant points of probable etiopathogenesis, symptoms, differential diagnosis, type of patient, and treatment are discussed. This entity, although extremely rare, should be considered when postoperative left chest pain and elevation of diaphragm are found, especially in a tense and angry or agitated patient.**

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*Figure 1*

\* Division of General Surgery, Veterans Administration Hospital, Topeka, Kansas.



Figure 2

His postoperative progress was otherwise good, notwithstanding the persistence of personality and emotional problems requiring constant attention and causing difficulties in management. Chest x-rays repeated a week later showed atelectasis of the left lower lung; the diaphragm appeared to be less elevated than during previous examination.

Six meals of soft bland diet were now well tolerated. As he resumed his normal activities the patient presented further management problems in the surgical ward, including craving for alcohol and suspected attempts at drug abuse. He was transferred back to Psychosomatic Medicine on the tenth postoperative day.

The day after the transfer, however, along with increased tension and anger, the patient again complained of left chest and epigastric pains, and dysphagia. Upper gastrointestinal x-rays revealed herniation of the fundus of the stomach through a rupture of the left diaphragm (Figure 3). Following the needed preparation, transabdominal repair of the left diaphragmatic hernia was performed under general anesthesia.

This involved lysis of fresh fibrinous adhesions around the stomach and its reduction below the diaphragm, incidental splenectomy, and repair of a 10-12 centimeter rent in the central tendinous area of the diaphragm. The esophageal hiatus was inspected and found to be normal. About 6-8 centimeters of

normal diaphragm was interposed between the hiatus and the repaired area. The subsequent postoperative course was uneventful. Healing and the resumption of oral feedings were normal.

### Discussion

The one case by Stone *et al.*, involved the right side of the diaphragm. Ours seems to be the first case of spontaneous postoperative rupture of the left hemidiaphragm in the surgical literature. Solomon *et al.*, related their case to strenuous exertion at dance, with lifting of the patient by her dancing mate.

The etiopathogenesis in our case is most probably linked to uncontrolled spells of tension, during the many episodes of agitation and anger so typical of this patient. The already distended stomach was ready to push its way through the acute herniation of the central diaphragmatic tendon. This was probably enhanced by the positive-negative pressure gradient between abdomen and chest.

The symptoms were ill-defined from the start. Pain, shortness of breath, dysphagia were related. The dysphagia is to be explained by the ascensus and rotation of the gastric fundus across the left diaphragm. In retrospect, this man admitted pain at the tip of the left shoulder. Had this symptom been de-

(Continued on page 278)

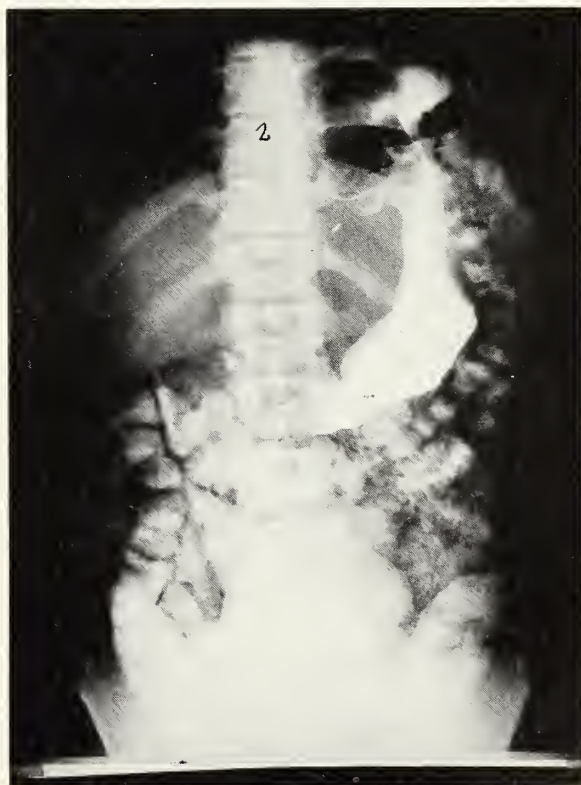


Figure 3



# Small Hospital Emergencies

## *Intensive Care Units in Small Hospitals*

ALFRED L. SCHERER, M.D., *Osborne, Kansas*

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**The case discussed demonstrates the necessity of cardiac resuscitation equipment and practical training in the small community hospital. Of particular importance is the necessity of all personnel to be able to restore respiration and circulation in the patient. It is suggested that practice sessions be included in hospital general routine.**

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IT WAS IN 1956 when Paul Zoll and associates first accomplished cardiac defibrillation externally on a patient with myocardial infarction.<sup>2</sup> In 1960 Kouwenhoven, Jude, and Knickerbocker demonstrated that external compression of the chest could maintain circulation long enough to effect defibrillation and the return of a sinus rhythm to the moribund patient.<sup>3</sup> In the ensuing years, Dr. H. W. Day and others developed intensive care units and have shown by long-term studies reduction in mortality in coronary artery disease.<sup>1, 4</sup>

The fact that intensive care by constant surveillance produces such effects has caused spin-off in smaller hospitals. Men such as Freeman have shown benefits obtained by putting the intensive care unit in the community hospital.<sup>5-8</sup> Since the hospital used as an example in this paper is small, it is difficult to compare it with Dr. Freeman's hospital of over 100 beds.

Osborne County Memorial Hospital was built in 1958. At that time it was a 16-bed unit with surgical and obstetrical units attached. In 1969 it was enlarged to 25 beds, with the inclusion of a special care unit of two beds. This unit is used for intensive care, operative recovery, and coronary care. The unit was designed to house the electronic monitor, pacemaker, and defibrillator which had been purchased in 1969.

The hospital has a maximum of four active physicians. As experienced by many small hospitals, it has the usual difficulty of keeping an adequate number of nurses, laboratory technicians, and other professional people. It is, therefore, easy to understand that extensive training in cardiac nursing, while desirable, is not possible. The hopeful extent of profes-

sional expertise is that the nursing staff be able to provide circulation and respiration for the patient who is in difficulty. The nursing staff to a greater extent is comprised of mothers and homemakers, as well as staff nurses. There is only one nurse on duty per eight-hour shift, and the intensive care area is without private nursing staff.

On three occasions, cardiac fibrillation occurred in patients in the presence of nursing or medical staff in the Osborne Hospital during the period 1959 through 1966. It was demonstrated at that time that although circulation and respiration could be maintained without defibrillation, our labors ended in frustration and death. It was this series of events which led to the purchase of adequate equipment in 1966, and to the establishment of a special care unit in 1969.

With the present stress on prevention, constant monitoring, playback tapes, and with the nurse taking the role of the doctor in making decisions, and because in some centers the goal is the prevention of cardiac arrest, it may be difficult to understand a program FOR treatment of cardiac arrest. But in a small community hospital, with a large patient-nurse ratio, it becomes important to be able to treat the arrest as it occurs. Such is the case in the following report.

### **Case Report**

A 65-year-old man experienced chest pain while working in the field. The pain was intense enough to make him return home. Within an hour, he was seen by his physician and was given one-fourth grain morphine sulfate and taken to the hospital. His pain had subsided and electrocardiogram revealed S-T segment changes, indicating an acute posterior coronary. He was placed in bed and given oxygen. His vital signs were within normal limits and his physician left the hospital. Five minutes later the physician was called back because of the following events. While adjusting the oxygen mask, the aide noted the patient turning gray, gasping, and becoming unconscious. The floor nurse was called who immediately started effective closed chest cardiac massage. On his arrival, approximately three minutes later, the physician could find no pulse. The patient was gray, gasping, and had vasocollapse. His pupils



were not dilated. Respiration was begun with an Ambu resuscitator. A board was put in place under the patient and closed chest cardiac massage was maintained at 40 to 60 beats per minute. The nurse anesthetist was called who intubated the patient and started intravenous normal saline.

During this time, the patient was given an ampule of sodium bicarbonate 44.6 milliequivalents intravenously. The monitor was connected; no QRS pattern was noted. On the termination of the first ampule of bicarbonate, a maximum shock of 400 watts per second was given to the anterior chest wall of the patient. Ten seconds after the shock general muscle fibrillation of skeletal muscles was noted. Fifteen seconds after the shock a QRS complex was seen on the monitor. The very first QRS on the monitor was perceived as a radial pulse. As the pulse became 60 beats per minute, the second vial of bicarbonate was given over a three-minute period.

Blood pressure taken two minutes after the restoration of the pulse revealed a pressure of 140/70. The total asystolic period was 15 minutes. Lidocaine was added to the intravenous, and given at the rate of one milligram per minute. Over the period of the next 10 hours, the patient exhibited an occasional premature ventricular contraction and runs of bigemina, lasting five minutes, which did not respond to increased rates of Lidocaine. After 24 hours, the patient gradually became oriented and had a gradual return of function similar to standard coronary convalescence. The Lidocaine intravenous was continued for a period of five days.

The patient remained in the hospital for five weeks before returning home. He gradually assumed normal activities. He is free from angina, has good exercise tolerance, and is able to have normal activity.

## Discussion

The illustration of this case presents points which are particularly pertinent to the small hospital. It is important in the small hospital that *all* personnel be trained to restore circulation and respiration for the patient. Although the customary stress is on prevention, it is a practical fact that fibrillation will occur. The salvage of the case presented is proof in point that if adequate circulation is not provided, all electronic equipment is of no help.

One of the problems facing the small hospital is the lack of sufficient case material for adequate training. One of the ways in which this can be overcome is for all patients who are obviously beyond help to be treated as if they were capable of being resuscitated.

An interesting point in the above case is that, although the patient was without pulse for 15 min-

utes, he never completely ceased breathing. His respiratory effort was not really effective and had to be supported with help. He did maintain agonal gasps throughout the time he had no pulse.

Another remarkable feature of the course of events was the immediate mottling of the skin due to lack of circulation. This was accentuated when the chest was compressed, producing large patches of blue and gray skin that did not change although the circulation was being provided. Immediately on the resumption of a pulse the patient had a pronounced universal pink flush. In this particular case, the patient was not in the special care unit, was not hooked to the monitor, and was not under the direct vision of the physician when the sudden loss of pulse took place. A point to consider is the question of what set of facts can be used to determine that the heart is in fact fibrillating. In the last analysis it is not always possible to be completely certain that the heart is in fibrillation. It is, therefore, recommended to let another member of the team evaluate the patient also. In the case presented, the physician conferred with the anesthetist who also confirmed the opinion that the patient was truly in ventricular fibrillation.

It was told as a true story that a doctor in a small neighboring hospital was taking an EKG of a resting patient when the tracing went flat. The doctor gave a precordial blow with the clenched fist to the patient only to have him respond, "What did you do that for?" It seems that the flat tracing was due to a loss of connection!

In the emergency situation, one must be sure his facts really indicate loss of pumping as well as circulation. At no time during the 15 minutes' loss of pulse did the patient's pupils dilate. In spite of this rather good indication of brain blood flow, the patient remained irrational for the next 24 hours, without any sign of abnormal circulation during these 24 hours. It required titration with morphine sulfate and Nembutal intravenously to be able to keep him from being combative. The patient reports that he has no knowledge of the 72-hour period beginning with the placing of the oxygen mask. As a postscript to the time when the most activity was going on, it is thought that additional doses of bicarbonate would have been of benefit in the amount of one vial every 15 minutes for three doses.

The rather vigorous attempts to maintain cardiac massage caused considerable complaint when the patient became lucid. This was most pronounced by the complaint of pain on deep inspiration as well as a general soreness. This confused and made difficult the assessment of actual chest pain from cardiac origin. Although the patient also complained of abdom-

*(Continued on page 280)*

# KUMC Trauma Conference

## *Traumatic Rupture of the Thoracic Aorta*

EDITED by F. W. RECKLING, M.D. and  
ARLO S. HERMRECK, M.D., Kansas City, Kansas

**Dr. Haskey (Surgical Resident):** The case to be presented is a 30-year-old male who was involved in an automobile accident. The patient was brought immediately to the KUMC emergency room. Upon admission, he was somewhat confused and had an obvious compound fracture of his left femur and a comminuted fracture of his right patella. He had gross bilateral hematomas about each eye. His vital signs upon admission were: pulse rate, 140 beats/min; systolic blood pressure, 130 mm Hg; diastolic, not recorded; and his respiratory rate, 30/min. Further examination revealed decreased breath sounds in the base of the left chest, palpable subcutaneous emphysema, and bony crepitus over the left ribs. His abdomen was nondistended but moderately tender with evidence of guarding. His bowel sounds were absent. He was neurologically intact, and his past medical history, as obtained from relatives, did not reveal any past serious diseases or evidence of hypertension.

A chest x-ray was obtained which revealed a small pneumothorax on the left side, multiple fractured ribs on the left, and also a somewhat widened mediastinum (*Figure 1*). A tube was inserted in the left chest and attached to an underwater seal. In addition to this, a diagnostic abdominal tap was carried out which revealed gross blood in the peritoneal cavity.

A preliminary diagnosis of ruptured spleen was made, in addition to the patient's fractures, and the patient was prepared for an operation. The patient was taken to the operating room on the evening of admission where he underwent an exploratory laparotomy with removal of a ruptured spleen. There was approximately 750 milliliters of bloody fluid in the peritoneal cavity, and no other major abdominal injuries. In addition to the exploration, the patient had debridement and reduction of the open fracture of his left femur.

Postoperatively, the patient did relatively well, although two complications developed. The patient was noted to be hypoxic on 40 per cent oxygen with a  $\text{PaO}_2$  of 40 mm Hg,  $\text{PaCO}_2$  of 32 mm Hg, and a

pH of 7.43. It was felt that the patient either had aspiration pneumonitis or fat embolism secondary to his fractures. In addition to this problem, the patient early in the postoperative period developed a systolic blood pressure measured by a cuff sphygmomanometer which ranged from 170 to 260 mm Hg, and a diastolic pressure which varied from 50 to 70 mm Hg. Blood pressure in the lower extremity was 100/60 mm Hg. Efforts were made to control the systolic hypertension with various pharmacological agents such as phentolamine, hydralazine, Arfonad, guanethidine, and sodium nitroprusside. These efforts failed. Because of the initial widening of the mediastinum which was present on the admitting chest x-ray (*Figure 1*) and persistent systolic hypertension, an aortogram was obtained (*Figure 2*).

**Dr. Reckling:** Dr. Reis, would you discuss the aortograms?

**Dr. Reis:** I think these films are fairly classical for a complete aortic transection. There is a very smooth contour of the aorta from the aortic valves down to the sixth rib posteriorly. At this point, one can see an abrupt interruption of aortic wall continuity (*Figure 2*, arrow). It would appear that the media and intima of the aorta are completely fractured at this region. The media and intima have retracted proximally and distally, and the continuity of the circulation is maintained only by an adventitial channel. This is a rather characteristic picture for a complete transection of the aorta.

**Dr. Reckling:** How about the location?

**Dr. Reis:** The location is absolutely characteristic. There are several sites where rupture of the aorta can occur. It usually occurs with decelerating injuries when the patient stops rather abruptly, but the non-fixed portions of the aorta continue forward. The points of aortic fixation are the ligamentum arteriosum, the arch vessels, and the pericardial reflections. Traumatic transection of the thoracic aorta usually occurs at these fixed sites, or more specifically in the ascending aorta, the descending aorta just distal to the left subclavian artery, and at the site of the ligamentum arteriosum. The diaphragm is an additional point where the aorta is fixed, and aortic rupture with deceleration injuries occurs in this region also.



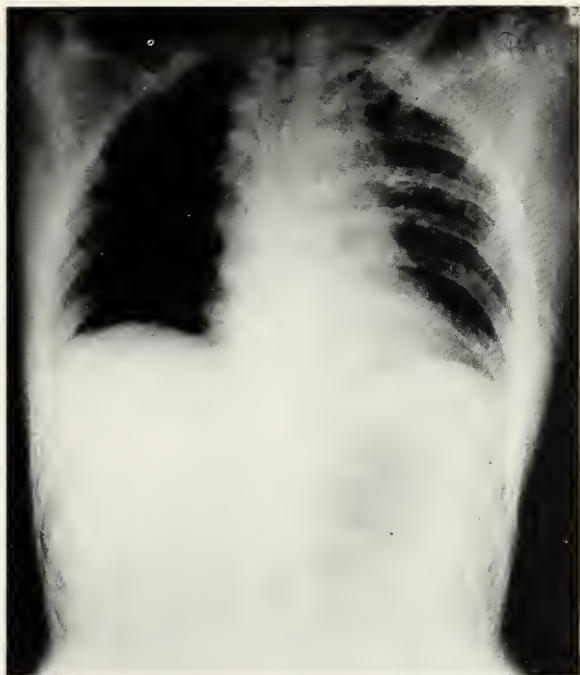


Figure 1. Portable supine chest x-ray taken in the emergency room after a chest tube was inserted. Note widened mediastinum and multiple fractured ribs posteriorly on the left side. A small apical hemopneumothorax persists on the left side.

**Dr. Reckling:** When was the diagnosis of aortic rupture established and what was done?

**Dr. Haskey:** The aortograms were taken five days following the initial injury, and we were then faced with the decision of when to operate. There were several factors which entered into this decision. As mentioned previously, the patient was having rather severe respiratory problems which required tracheostomy and mechanical ventilatory support. We would like to have delayed surgery because of this problem. On the other hand, this patient had severe systolic hypertension which was not controllable with anti-hypertensive agents, and the possibility of rupture with exsanguination was present. Fortunately, the patient's renal function was reasonably good. The patient continued to put out 1,000 to 2,000 milliliters of urine per day and had a normal creatinine clearance. The decision was made to repair the rupture despite the pulmonary problems.

**Dr. Reckling:** Was the patient placed on extracorporeal bypass for the operation?

**Dr. Reis:** Yes, we used total cardiac bypass. Left heart bypass would have been a very appropriate approach; that is, left atrial-femoral bypass, with the pump perfusing the distal circulation and the heart perfusing the proximal circulation (the aorta and arch vessels). The reason we didn't use left heart bypass in this man was because of his pulmonary status, which included pulmonary edema. We were

concerned that the latter was due to impairment of cardiac function. With left heart bypass, one is dependent upon the patient's own heart to perfuse the proximal circulation, whereas with total cardiopulmonary bypass with cephalad and caudal cannulation, we need not depend upon cardiac action to sustain the circulation. Since the cardiac state was in question, we thought it more appropriate to have total bypass rather than left heart bypass.

We opened the chest through a left thoracotomy incision at the fifth intercostal space. The arch of the aorta was normal, but a large pulsatile mass was encountered just distal to the left subclavian artery (Figure 3). This was the site of rupture with only the adventitia providing continuity for this large vessel. After obtaining proximal and distal control, a 3 centimeter section of aorta was removed and a synthetic graft inserted. The rupture in the intima and media had formed a flap (Figure 4), or a rather nice valve, only it was going the wrong way. This was obstructing blood flow to the distal aorta. This explained why he had a lower extremity systolic pressure of only 100 mm Hg.

**Dr. Fiallos (Surgical Resident):** This patient did not have a bradycardia. Don't you usually have bradycardia with hypertension?

**Dr. Maxwell:** Maybe the injury and rupture of

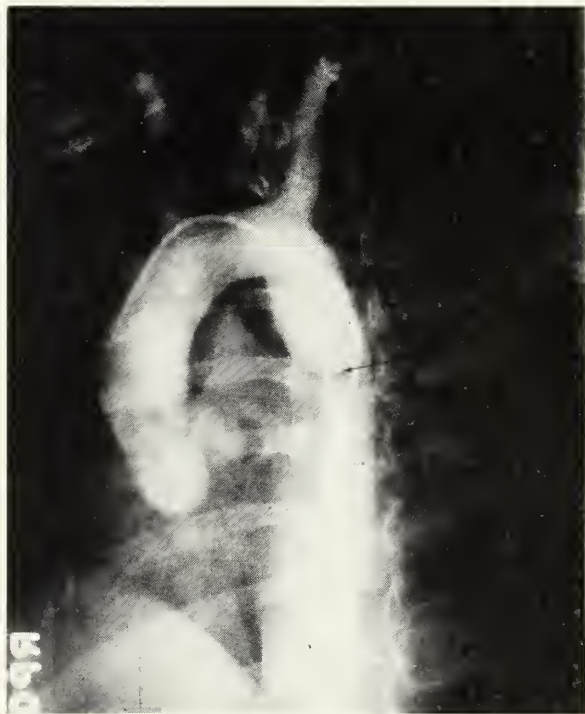


Figure 2. A transfemoral retrograde aortogram obtained five days following the injury. The aortic valves are competent, and the arch of the aorta with the major arch vessels are normal. Note the abrupt interruption of aortic wall continuity near the sixth rib posteriorly (arrow).





Figure 3. A view of the ruptured aorta at the time of operation. The lung is retracted anteriorly. A large mass is present just distal to the left subclavian artery (arrow).

the aorta altered the aortic baroreceptors so that they would no longer function.

**Dr. Reis:** I think that, in general, hypertension does lead to bradycardia through a baroreceptor mechanism, the efferent portion of which is usually a vagal augmentation and sympathetic withdrawal. On the other hand, this is a delicately balanced arrangement between many factors, and other areas of baroreceptor function certainly remain. But in this man, many things are going on; thus the balance must have been disturbed.

**Dr. Reckling:** I wonder, Dr. Reis, if you would run through the diagnosis of ruptured aorta. What do you look for when you are thinking of ruptured thoracic aorta? How do you document this, and when should it be done?

**Dr. Reis:** I think that whenever you have a deceleration injury, particularly with trauma to the chest, and the patient has a widened mediastinum on chest x-ray, the diagnosis of thoracic aortic rupture should be considered. The only definitive means of making the diagnosis is by an aortogram. It is important to have the information derived from the aortogram in planning the operative approach. For example, ascending aortic injuries should be ap-

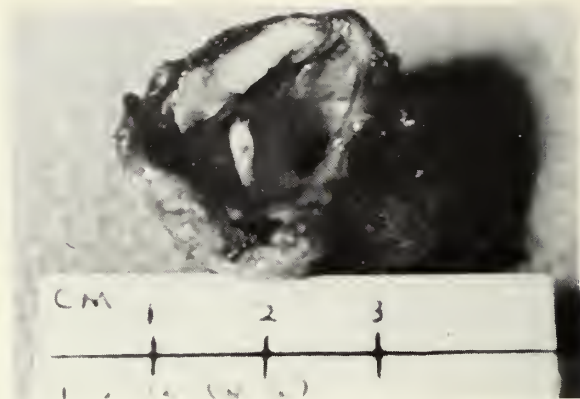


Figure 4. The resected 3 cm. segment of the ruptured aorta. The intima and media were circumferentially transected. The distal flap has formed a partially occluding valve.

proached through a sternal splitting incision, whereas descending aortic injuries, such as this one, are best approached through a left thoracotomy incision. While we are bringing up the subject of aortography, I think it is very helpful to follow a thoracic aortogram, such as the one we saw today, with films of the abdominal aorta, the renal arteries, and other vessels as well.

In addition, if one merely waits for ten minutes or so, an intravenous pyelogram (IVP) can also be obtained. It is important to have these studies to rule out associated abdominal injuries which are common in deceleration injuries.

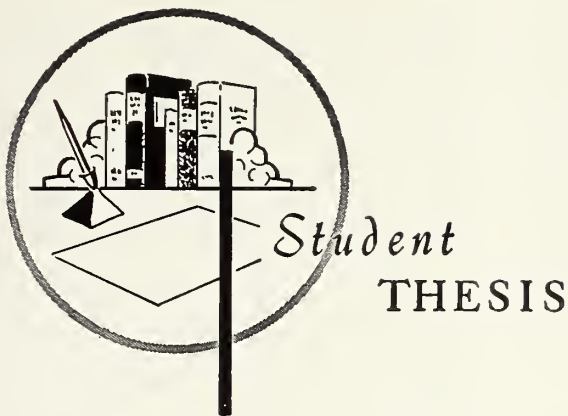
**Dr. Fiallos:** When you have a case like this, do you prefer to do the aortogram by catheterization of the aorta through a peripheral artery, or by injecting the dye into the pulmonary artery?

**Dr. Reis:** About five or six years ago, there was a wave of enthusiasm for aortography by the pulmonary arterial injection technique. This involves introducing a catheter into the pulmonary artery, injecting a bolus of dye, and waiting for recirculation to visualize the aorta. In general, the concentration of the dye, using this technique, is such that one does not get adequate visualization of the aorta. I think that if one needs to have a study, one should have a good study. With judicious advancement of the catheter it can be done by direct aortic cannulation. So, I would use a direct approach in introducing the catheter into the arterial system. We use a number 7 or 8 catheter and a rapid mechanical injector, to get the dye in relatively large amounts over a short period of time, to get adequate pictures.

**Dr. Maxwell:** Since you knew that this was likely the site of rupture, why would not it have been better to do an aortogram through the brachial artery instead of retrograde catheterization via the femoral vessel up through the ruptured aorta?

**Dr. Reis:** I think your point is well taken, but the

(Continued on page 278)



# Primary Aldosteronism

## *Review of Diagnostic Tests and 15 Cases*

GERALD KOPPES,\* *Kansas City, Kansas*

PRIMARY ALDOSTERONISM was first described by Jerome Conn as a clinical entity in 1955. He described hypertension, hypokalemia, and metabolic alkalosis as being caused by an adrenocortical adenoma. It is now a well-recognized syndrome with over 1,000 probable known cases. The primary mechanism is the pathological over-secretion of aldosterone, a mineral-regulating steroid, by an adrenal adenoma. The syndrome has many protean manifestations making the effort which is being directed toward improvement in diagnostic testing very important. The diagnosis is of particular importance because this type of hypertensive disease is curable with surgery, and the exact incidence is not known in the 23 million hypertensives in the United States. It is the purpose of this paper to give general consideration to the syndrome with specific concentration upon diagnostic procedures. Also included is a review of eight proven and seven suspected cases at KUMC and KCVAH.

### **Renin-Angiotensin-Aldosterone System**

Aldosterone, considered to be the principal mineralocorticoid hormone, has been known to be a normal secretory product since 1952.<sup>1</sup> It has a much greater potency than either of the other two major mineralo-corticoids produced by the adrenal cortex, those being 11-desoxycorticosterone (DOC) and

corticosterone. DOC and corticosterone production are controlled by adrenocorticotrophic hormone (ACTH) levels and are the immediate precursors in the biosynthetic pathway for aldosterone. The role of the adrenal cortex in the homeostasis of electrolyte metabolism is mediated through the renin-angiotensin-aldosterone system.<sup>2</sup> This system is very important in the normal daily regulation of aldosterone and electrolytes.

Aldosterone secretion is stimulated by volume depletion, high levels of potassium, ACTH, and angiotensin.<sup>3</sup> The kidneys sense changes in blood pressure and flow in the juxtaglomerular apparatus of the afferent arteriole as a result of changes in body sodium, extracellular fluid volume, and blood volume with the consequent release of renin and stimulation of aldosterone secretion. Studies of aldosterone secretion provide proof that an increase of serum potassium (K) concentration acts as a direct stimulus for aldosterone secretion. ACTH may immediately raise aldosterone secretion in various forms of non-specific stress. An active anterior pituitary gland is vital for the complete response by the adrenal gland in aldosterone secretion to various stimuli.

In the normally functioning renin-angiotensin-aldosterone system, the enzyme renin is released by the cells of the afferent arteriole entering the glomerulus.<sup>23</sup> Renin acts upon angiotensin I, a decapeptide produced in the liver, producing angiotensin II, a potent vasopressor comprised of eight amino acids. Angiotensin II, in physiological amounts, selectively stimulates the secretion of aldosterone from the adrenal cortex.

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school.



Renin release is postulated as being controlled by a "stretch" receptor in the cells of the afferent glomerular arteriole. Whether a sodium "load chemoreceptor" in the cells of the macula densa of the distal tubule, part of the juxtaglomerular apparatus, is also present is controversial.<sup>23</sup> Aldosterone's major renal function is the promotion of sodium (Na) ion reabsorption from tubular fluid at the distal tubule and exchange secretion of K ions. If stretch is diminished (decreased blood pressure), more renin is produced. Working on the end organs—the kidneys, the sweat glands, and the gastrointestinal tract—sodium loss is minimized, an equilibrium is established, and vice-versa.

There is also an interesting "escape" phenomenon with the administration or stimulation of aldosterone. Following the initial period of ECF volume expansion, the normal subject "escapes" from the sodium retaining effect.<sup>23</sup> A sodium balance is regained but with an expanded fluid and sodium body content.<sup>56</sup> Potassium, hydrogen, and ammonium ions increase in the urine with aldosterone excess as a result of increased exchange of potassium and hydrogen for sodium in the distal tubule. Serum potassium decreases and the body deficit of potassium increases as the result of potassium output exceeding intake. Eventually, an unstable balance is reached with output roughly equaling intake. Even at this point, the serum potassium is low and the renal clearance of potassium high.

### Pathology

Aldosterone is said to be produced in the human by the adrenal zona glomerulosa.<sup>74</sup> Several ultrastructural studies have been done. Disagreement was noted among the several different investigators who found structures similar to either the zona fasciculata, the zona glomerulosa, or "hybrid" cells. The last reported case of primary aldosteronism<sup>74</sup> supported the report of the zona fasciculata with its tubulovesicular mitochondrial crista. Pathologically, the adrenal tumors are small, 68 per cent weighing less than 6 grams. In a study of 94 patients, the tumor ranged from 3 to 35 millimeters in diameter, of which two-thirds measured 8 to 16 millimeters in diameter.<sup>26</sup> The tumors show different histologic patterns, but functionally they are all composed of "hybrid" cells.<sup>62</sup> The cut section usually shows the characteristic golden-yellow or yellow-brown color. Almost all are benign, but at least five cases of a malignant tumor are reported. Focal or diffuse hyperplasia of the zona glomerulosa of the attached or contralateral adrenal cortex is found in association with the aldosterone producing adenomas (APA).

### Incidence

Currently, there is much disagreement as to the

exact incidence of this interesting syndrome. In 1960, Conn was of the opinion that primary aldosteronism was a more common disease than the less than 1 per cent estimate.<sup>17</sup> In 1964, he first proposed that about 20 per cent of patients with "essential" hypertension had an APA.<sup>22</sup> He believed that hypokalemia and severe K depletion were late manifestations of the disease. Most patients with primary aldosteronism were observed to have hypertension for 10-15 years, but hypokalemia for only one to two years. In fact, some patients may never become hypokalemic, and, thus, diagnosticians must not insist upon persistent hypokalemia.

In 1965, Conn *et al.*, created a new diagnostic tool when they demonstrated that "overproduction of aldosterone in the presence of suppressed plasma renin activity" was specific for an APA.<sup>22</sup> They postulated then that *at least* 20 per cent of patients with "essential" hypertension had primary aldosteronism and could be cured because of the following four reasons.

- 1) Sherwin had autopsied 220 hypertensive patients and 220 non-hypertensive patients matched for age and sex. Twenty per cent of the hypertensive group and only 1.8 per cent of the matched group had a gross cortical adenoma.

- 2) Garst *et al.*, studied the excretion of aldosterone in 38 patients with essential hypertension and normal serum electrolytes. Twenty-five per cent were measured to have a gross overproduction of aldosterone.

- 3) Brown *et al.*, measured plasma renin activity (PRA) in 48 hypertensive patients without demonstrable renal artery stenosis. Twenty-one per cent of the group had subnormal renin values. PRA was subnormal in 38 per cent of those with low serum potassium.

- 4) Twenty-five per cent of hypertensive patients receiving a thiazide compound developed a significant hypokalemia.

In 1966, Conn *et al.*, described five cases to firmly establish normokalemic primary aldosteronism.<sup>24</sup> They found that the duration and intensity of the disease were associated with the size of the adenoma. The normokalemic forms had tumors about 5 millimeters in diameter and the "typical" forms 15 millimeters—a difference of 19 times the mass size. In 1967, Conn found APA in 7.6 per cent of 184 patients with essential hypertension screened in his department.

In 1968, Liddle *et al.*, excluded primary aldosteronism in 87 of 90 patients by measuring aldosterone and renin values in a prospective study.<sup>37</sup> In contrast, they found the disease in at least 4 of 10 patients with concomitant hypertension and unprovoked hypokalemia. They concluded that primary



aldosteronism was a rare cause of hypertension in the absence of hypokalemia. They also found subnormal PRA was characteristic in essential hypertension with marked suppression in 21 per cent. This study indicates that decreased plasma renin would not be a valuable screening device because low levels so commonly occur in hypertensives.

Conn's original four-criteria upon which he based his original estimate have since become obsolete. Renin and aldosterone measurements were not done together in those studies. Kaplan found that aldosterone excretion was always normal in his patients with benign essential hypertension but 21 per cent still had a suppressed PRA.<sup>47</sup> Other autopsies showed adenomas in 0.4 per cent to 2.5 per cent of normotensives, and 5 per cent to 7 per cent of hypertensives.<sup>47</sup> A recent series<sup>50</sup> of 1,495 autopsies had 1.4 per cent with adrenal cortical adenomas, and hypertension was not of increased incidence in those with adenomas.

Kaplan *et al.*, still believe that primary aldosteronism is a rare disease in less than 1 per cent of the hypertensive population. Conn favors 8 per cent from his studies. Both have good evidence, and so the exact incidence is not known for certain. However, all do agree that it is an important disease.

## Surgery

Appropriate treatment is surgical resection of the adenoma or unilateral adrenalectomy. Primary aldosteronism with hyperplasia or normal glands is treated with subtotal adrenalectomy. These last groups may also require additional treatment medically with aldosterone inhibitors or antagonists.<sup>55</sup> Diagnostic precision is very necessary before adrenal exploration, because if no adrenal anatomical abnormalities are found, a subtotal adrenalectomy is performed. Since primary aldosteronism is not a medical emergency, any dangerous complications—such as potassium depletion—should be corrected before surgery. Because of the extreme difficulty encountered due to the small size and location of the adenoma, a thorough exposure and evaluation of both adrenal glands are essential unless located preoperatively. The left is most frequently explored first, because of the increased incidence of adenomas in that gland. Some adrenal tissue (one-half gland) should be left to prevent Addison's disease. If the hypertension is quite severe, a bilateral adrenalectomy is sometimes indicated.<sup>31</sup> The surgical approach is generally transabdominal, although the morbidity is less with the posterior technique.<sup>31, 66</sup>

Medical treatment is available for those who cannot undergo surgery or who have postoperative persistence of hyperaldosteronism.<sup>55</sup> Amino-glutethimide, an inhibitor of aldosterone biosynthesis, or spironolactone, an aldosterone antagonist, may be

used. Four hundred milligrams of spironolactone daily will usually restore normal blood pressure and electrolytes within five weeks. A lower maintenance dosage can then be used. Amino-glutethimide is still experimental but in ten cases of primary aldosteronism treated, Liddle successfully reduced aldosterone secretion, decreased blood pressure, and improved the electrolyte metabolism.

## Prognosis and Follow-up

The largest review by Conn (145 patients) in 1963 has been supported by recent reports. Excellent results were obtained from surgery. Seventy per cent were completely cured, including hypertension and metabolic abnormalities after removal of their adrenal cortical adenomas.<sup>19</sup> Twenty-five per cent were significantly improved (their blood pressures were among the highest recorded in the series). Only 5 per cent remained unimproved. The abnormality of electrolyte metabolism may be corrected within ten days after removal of the APA. This abnormality may persist for up to four weeks, due to the chronic hypervolemia producing suppression of aldosterone secretion in the normal adrenal gland tissue.<sup>4</sup> Na restriction should thus be avoided in the early postoperative period to prevent adrenal insufficiency and hyperkalemia. The blood pressure response is more variable, and may not descend or reach normal for several months postoperatively.<sup>19</sup>

## Differential Diagnosis

The differential diagnosis is one of hypertension associated with hypokalemia. Primary aldosteronism is differentiated from the rest by the unique combination of elevated aldosterone secretion and depressed renin levels. For a complete listing, see *Table I* modified from J. A. Luetscher.<sup>56</sup>

A condition to be differentiated from primary aldosteronism is congenital aldosteronism or bilateral adrenal hyperplasia with onset in childhood.<sup>19</sup> It may be a form of secondary aldosteronism with an abnormal juxtaglomerular apparatus. It is frequently a malignant form of hypertension that can be suspected because of the long history beginning in childhood.

The many causes of secondary aldosteronism must also be differentiated from primary aldosteronism. Secondary aldosteronism is the result of increased physiological amounts of aldosterone, and is a normal response to various stimuli. The most frequent cause is probably diuretic therapy resulting in sodium loss. Malignant hypertension and renovascular hypertension are also frequent.<sup>70</sup> A careful history and observance of the patient without drugs should rule out the thiazides as etiologic agents.

Moderate essential hypertension is associated with increased aldosterone in 21 per cent to 25 per cent,

TABLE I  
DIFFERENTIAL DIAGNOSIS OF  
PRIMARY ALDOSTERONISM

*A. Arterial Hypertension and  
Renal Potassium Wasting*

Aldosterone Secretion ↑, Renin ↓

- a) Primary aldosteronism with adrenal adenoma or carcinoma
- b) Adult bilateral adrenal hyperplasia
- c) Congenital aldosteronism
- d) Aberrant aldosteronoma (Howard)

Aldosterone Secretion ↑, Renin → or ↑

- a) Hypertensive on thiazide diuretic
- b) Malignant hypertension
- c) Renal artery stenosis
- d) Benign, essential hypertension
- e) Pyelonephritis

Aldosterone Secretion Normal, Renin → or ↑

- a) Pseudoaldosteronism, familial (Liddle)
- b) Exogenous mineralocorticoid
- c) Some cases of malignant hypertension, renal ischemia, or thiazide-treated benign hypertension
- d) Excessive cortisol secretion—Cushing's syndrome  
ACTH secretion by oat-cell Ca, thymus, pancreas, and G.B. tumors
- e) Chronic licorice ingestion  
(Decreased aldosterone secretion)

*B. Renal Potassium Wasting With Normal  
Blood Pressure*

Aldosterone Secretion ↑, Renin → or ↑

- a) Renal disorders (Fanconi's, renal tubular acidosis, and other "Na losing nephritis")
- b) Hyperplasia of juxtaglomerular complex (Bartter's syndrome)

Aldosterone Secretion Normal

- a) Familial or sporadic forms of idiopathic renal K wasting
- b) Renal disorders (e.g., Tubular acidosis) without aldosteronism
- c) Hyperdesoxycorticosteronism with hypokalemic alkalosis and edema

but potassium wasting is rare, unless secondary to drugs.<sup>38, 56</sup> It is rare when a case of severe malignant hypertension resembles primary aldosteronism. In malignant hypertension the blood pressure is usually higher, papilledema is present, metabolic changes less marked, and, most importantly, the renin elevated.

Evidence of renal disease or renal abnormalities not found in primary aldosteronism should be further investigated.<sup>56</sup> Renal artery stenosis or obstruction may also simulate Conn's disease in every way except for an increased renin level. Arteriograms are

indicated when renal artery stenosis is suspected. These abnormalities will be discussed later. When severe renal disease complicates primary aldosteronism, the diagnosis becomes more difficult or impossible.<sup>19</sup>

Twenty-four-hour urinary steroids are important because a tumor or hyperplastic adrenal gland can secrete cortisol. This mineralocorticoid excess may masquerade clinically and metabolically as primary aldosteronism.<sup>56</sup>

Potassium-wasting renal diseases are not difficult to differentiate from an APA because acidosis, hyponatremia, hypovolemia, and decreased total body sodium are produced.<sup>19</sup> Chronic licorice ingestion has been reported to produce hypertension, hypokalemia, aldosteronopenia, and suppressed PRA secondary to the active principle, glycyrrhizic acid. It is similar to desoxycorticosterone in metabolic activities.<sup>25</sup>

In 1961, Conn described nine cases differing from congenital aldosteronism with an average age of 44 (range 25-54), hypokalemia, and increased aldosterone excretion. Eight showed hyperplasia and one had normal adrenals. Seven of the nine were unimproved by surgery, even though all were cured of their metabolic abnormalities. Conn thought that the aldosteronism was secondary to the hypertensive disease.<sup>18</sup> Many reports, utilizing renin studies, describe patients with adrenal hyperplasia having laboratory studies identical with those of primary aldosteronism. Baer *et al.*, suggested that all adrenal tissue is responding to a tropic stimulus, other than ACTH or angiotensin.<sup>1</sup> They found this condition in 11 of the 23 patients with primary aldosteronism and called it pseudo-primary aldosteronism. All failed to be corrected by adrenalectomy. Because of the different responses to surgery, others also feel that this is distinct from primary aldosteronism. Renal involvement may account for the lack of cure.

### Clinical Manifestations

The diagnosis of primary aldosteronism is a clinical and laboratory diagnosis.<sup>65</sup> Infallible preoperative diagnostic criteria are important. Clinical signs are important in the recognition of the possibility, and the diagnosis depends on laboratory verification. In 1960, Conn stated that in his experience, requiring all the classic findings, he could only diagnose about 30 per cent of the cases.<sup>17</sup> There is certainly a spectrum with the classic case on one end and the mildest form exhibiting only hypertension on the other.

The clinical characteristics of patients with primary aldosteronism were best described by Conn *et al.*, in analyzing the 145 cases reported until 1963.<sup>19</sup> These figures have now seemingly changed



a little because of the earlier diagnosis of the milder cases. *Table II* from Conn<sup>19</sup> outlines the symptoms.

Symptom	Female Patients (Number and %)	Male Patients (Number and %)	Total
Muscle weakness .	54 (71)	21 (78)	75 ( 73)
Polyuria (nocturia) . . . . .	53 (70)	21 (78)	74 ( 72)
Headache . . . . .	41 (54)	12 (44)	53 ( 51)
Polydipsia . . . . .	34 (45)	13 (48)	47 ( 46)
Paresthesia . . . . .	23 (30)	2 ( 7)	25 ( 24)
Visual disturbance	16 (21)	6 (22)	22 ( 21)
Intermittent paralysis . . . . .	18 (24)	3 (11)	21 ( 21)
Tetany . . . . .	20 (26)	1 ( 4)	21 ( 21)
Fatigue . . . . .	17 (22)	3 (11)	20 ( 19)
Muscle discomfort	13 (13)	3 (11)	16 ( 16)
No symptoms . . . . .	4 ( 5)	2 ( 7)	6 ( 6)
Total . . . . .	76 (74)	27 (26)	103 (100)

The symptoms seem to be related to one of the following: abnormal renal function, muscular abnormality, or hypertensive cardiovascular disease (CVD). Muscle weakness, nocturnal polyuria, headache, and polydipsia were the most common symptoms, with the first two present in 72 per cent and 73 per cent, respectively. Paresthesias, visual disturbances, intermittent paralysis, tetany, fatigue, and muscle discomfort were present in less than 25 per cent. Six per cent were completely asymptomatic. Male patients had a considerably lower incidence of paresthesias, intermittent paralysis, and tetany than female patients. Edema was rare, being present in only 3 per cent at physical examination.

*Table III* from Conn<sup>19</sup> outlines the physical findings.

All patients had hypertension, as this is the basic manifestation. Fifty per cent had relatively mild retinopathy, and none had Grade IV retinopathy without a coexisting renal lesion to explain it. Forty per cent had cardiomegaly with poor x-ray correlation. Tetany was manifested by 9 per cent of the females and no males as seen in the previous difference of muscular related symptoms.

The age range was from 3 to 75. In 135 patients, 72 per cent were between 30-50 years of age, with 2.6:1 female-male ratio. In 91 per cent a single adenoma was present, and 9 per cent had multiple or bilateral adenomas. Left-sided lesions appeared to be about twice as common as those on the right. Women accounted for the difference.

TABLE III  
PHYSICAL FINDINGS IN 103 PATIENTS  
WITH PRIMARY ALDOSTERONISM

Findings	Female Patients (Number and %)	Male Patients (Number and %)	Total
Hypertension . . . .	76 (100)	27 (100)	103 (100)
Retinopathy . . . . .	34 ( 45)	17 ( 63)	51 ( 50)
Cardiomegaly . . . .	28 ( 37)	13 ( 48)	41 ( 41)
Positive Trousseau	16 ( 21)	2 ( 7)	18 ( 17)
Tetany . . . . .	9 ( 12)	0	9 ( 9)
Positive Chvostek	9 ( 12)	0	9 ( 9)
Paralysis . . . . .	4 ( 5)	0	4 ( 4)

### Laboratory Evaluation

With hypertension being present and excretion of 17-hydroxycorticoids normal, two laboratory measurements will make the absolute diagnosis: (1) Excretion or secretion of aldosterone must be increased. (2) Renin secretion must be depressed and unresponsive to stimulation. There are, however, a multitude of other tests which are either helpful or show great diagnostic promise. The laboratory investigation will be considered.

#### Hypertension

Hypertension is the most important finding. It prompts one to seek a specific etiology. It is present in 100 per cent. The hypertension ranges from mild to severe, but is usually emphasized to be of a benign, essential form.<sup>56</sup> Malignant hypertension occurs but is fortunately rare. It is frequently of long duration, usually for greater than two to three years.<sup>19</sup> A variable response to anti-hypertensive medications is noted. There are no known genetic or familial factors. In fact, a further stimulus to investigation in these cases might be the relatively young patient without a familial history of hypertension and no other obvious cause. The radiologist usually finds the heart size to be within normal limits. Grade IV fundoscopic changes should be lacking, and generalized arteriosclerosis not be evident on physical examination.

Serious vascular complications are not generally acknowledged, but it may be erroneous to consider this hypertension innocuous, because the cause of death in ten patients before the syndrome was known was almost equally divided among CVA, CHF, and renal failure. Arteriosclerosis is also commonly found on renal biopsy.<sup>56</sup> Chronic hypokalemia can also cause structural renal damage. Tests for other etiologies of hypertension, such as VMA excretion, are negative.<sup>56</sup> Patients suspected of having



primary aldosteronism should have a hypertensive IVP, with early and late films to demonstrate possible delayed arrival or delayed elimination of contrast material. If a lack of symmetry is seen, renal arteriograms should be done to rule out renal artery stenosis or obstruction.

### *Ancillary Tests*

#### RENAL FUNCTION

In Conn's analysis<sup>19</sup> of patients with primary aldosteronism, 85 per cent had proteinuria (usually of slight degree), 80 per cent a decreased concentrating ability, and 80 per cent a deficient response to pitressin. However, other glomerulotubular function (*e.g.*, BUN, Creatine) was normal in over 60 per cent of the patients. Therefore, examination of the urine may give some additional diagnostic clues. As in essential hypertension there is an increased filtration fraction, because the glomerular filtration rate tends to fall less than renal blood flow.<sup>56</sup> Urine osmolarity and specific gravity fall to approach a plasma ultrafiltrate. The maximum urinary concentration reached during dehydration or after pitressin is reduced, probably because of the potassium deficiency. The urine is consistently neutral and has a very low titratable acidity and increased ammonia, as earlier explained. Polydipsia and polyuria are often present, but normal urine volumes are common. The polyuria is most often a nocturia with reversed diurnal rhythm of water and electrolyte excretion. This is usually posture related (recumbent posture), and a similar effect is noted in normal persons receiving large doses of mineralocorticoids. Changes in the posture produce variations in the effective vascular volume.<sup>54</sup> Adenoma removal corrects this defect.

#### GTT

Fifty-four per cent of glucose tolerance tests performed in 39 patients showed an impaired tolerance for carbohydrate.<sup>19</sup> This is presumably related to the effect of hypokalemia on the pancreas and is corrected after the hyperaldosteronism is controlled.

#### EKG

The electrocardiogram is non-specific but will almost always be abnormal in the initial observations.<sup>56</sup> In only 20 per cent of 79 cases was the EKG not suggestive of hypokalemia.<sup>19</sup> Changes seen were: (1) a normal to slightly prolonged P-R interval; (2) sagging S-T segments; (3) inverted T-waves; and (4) prominent U-waves, especially in the chest leads.<sup>56</sup> Repair of the K deficit will essentially revert these changes to normal. Left ventricular strain or hypertrophy may also show these findings.

#### ABNORMAL CIRCULATORY REFLEXES

Abnormal circulatory reflexes as occur in auto-

nomic insufficiency may be present in about 50 per cent of patients. Potassium repletion tends to correct these reflexes. A "square wave" response or absence of hypertensive overshoot after the Valsalva maneuver is seen.<sup>2, 56</sup> They also show an unusual fall in blood pressure when upright, with no reflex pulse changes. These tests are neither reliable nor specific for primary aldosteronism.

### *Specific or Definitive Tests*

#### SERUM K AND URINARY ELECTROLYTES

There is still widespread belief that the serum potassium is the best single screening test. In larger series, hypokalemia will develop in about 10 per cent of hypertensives while on thiazide diuretics.<sup>47</sup> Kaplan studied 75 patients with thiazide induced hypokalemia and found primary aldosteronism in none. However, a significant proportion of those with spontaneous hypokalemia will have an APA. Conn states that the development of severe muscular weakness during the first week of chlorothiazide administration often results in the demonstration of an aldosteronoma.<sup>19</sup> Thought may be given to the measurement of serum potassium before beginning thiazide treatment in a hypertensive patient. Repeated serum potassium measurements in the absence of other reasons for a decreased potassium could select patients for further study.<sup>65</sup> Multiple measurements may be necessary to detect reduced potassium. Important to note is that the normal serum potassium is about 0.5 mEq higher than the normal plasma potassium because of clot formation and release of potassium. Exercise of the arm before blood drawing can also raise the serum potassium by 1 mEq and could mask cases of hypokalemia.<sup>10</sup>

In the most recent studies, George found a decrease in the serum potassium with oral sodium loading in all his patients with primary aldosteronism.<sup>39</sup> He felt that this was as valuable for diagnosis as aldosterone secretion and excretion, supporting the electrolyte formula (to be described).

Before measuring serum potassium and 24-hour urinary electrolytes, diuretics should be stopped for at least one week, and preferably for one month. A diet is given containing at least 200 mEq sodium or 6 grams of NaCl, to insure an adequate sodium diet. While the patient is hypokalemic, a urine sodium above 100 mEq coupled with a urine potassium above 30 mEq per 24 hours is quite suspicious and deserves further investigation.<sup>34</sup> Ordinarily, in the presence of potassium deficiency, the excretion of potassium in the urine is not very high, unless potassium loading to raise the serum potassium is taking place. The potassium wasting being measured above is manifested in the natural state by the daily excretion of the amount ingested in the diet. Ordinarily, with a potassium deficiency, there is retention of

most of the daily potassium intake.<sup>56</sup>

The serum sodium is usually normal or elevated with an alkalosis of a high or upper limits of normal  $\text{CO}_2$  combining power. Neither, however, is necessarily present.<sup>56</sup>

#### BODY BALANCE OF ELECTROLYTES

Demonstration of a significant potassium deficiency by measurement of exchangeable body potassium can be done, but has not had widespread use. Severe body depletion is present in patients with an aldosterone producing adenoma (APA) but there is considerable overlap in other hypertensives. It is also not useful because illness or malnutrition can reduce the total body potassium without a specific potassium deficiency. Milne described a more reliable test of retention of greater than 300 mEq K after several days of potassium loading. The loading may be done with 100-150 mEq K daily. A measurable potassium retention in the presence of a deficiency can thus be easily measured and without any special procedures. A few patients, however, are refractory to this treatment, and testing has not been standardized or further studied. A negative potassium balance is quickly restored after withdrawal of the potassium load.<sup>56</sup>

Most patients show a normal response when given 10 mEq Na daily by conserving sodium. Potassium wasting can also be reduced by this maneuver. Total body sodium content and extracellular fluid volume, along with total exchangeable sodium are usually significantly increased. These parameters are not reliable for diagnosis even though they are increased more in primary aldosteronism than in other forms of hypertension.<sup>56</sup>

#### SWEAT AND SALIVARY Na/K

Aldosterone acts on the renal tubule, sweat glands, salivary glands, and gastric and enteric mucosa in the exchange of sodium and potassium in the secretions. The others do not escape the effect of aldosterone as the kidney does. The result of the sweat Na:K ratio is not too reliable due to the wide range of normal, although the sweat sodium concentration is usually quite low in primary aldosteronism.<sup>56</sup>

The salivary ratio was used as a screening test for aldosteronism in hypertensives for many years. Lauer considered a ratio of less than 0.25 diagnostic of an abnormal salt-retaining stimulus when on a regular diet. He thought that a Na:K ratio of greater than 1 ruled out primary aldosteronism. Crane observed the salivary ratio to average 0.4 in APA, with the range 0.16-0.62. There are, however, overlaps with other types of patients, *e.g.*, essential hypertensives. The response is not consistent or large enough to be a reliable diagnostic criteria.<sup>3, 59</sup> The sodium content varies too much with the volume of secretion.

Several investigators—including Richards in 1970—have found that the Na:K ratio in the gut in large series of patients is both a good and a practical way of measuring aldosterone effects.<sup>65, 69</sup> The effect of aldosterone is presently better shown in the gut than in any other end organ. The technique is simple and can be applied to any laboratory. A small capsule, prepared from small tubing, filled with dextran solution and tied at each end, is swallowed. Three capsules, in-vivo dialysates of the feces, are then retrieved from the stool before and during treatment with spironolactone. The sodium and potassium content of the capsules is measured. The patient can be on a regular diet, but must not have diarrhea or constipation. The separation is so wide that it shows hypermineralocorticoidism as well as hyperaldosteronism. A false positive is unlikely unless there is severe constipation. The Na:K ratio in primary aldosteronism is 0.016 (0.005-0.049); normal is 0.24 (0.029-2.02). Spironolactone will make the ratio in aldosteronism normal. This test seems a useful tool in the investigation of these states.

#### RECTAL ELECTRICAL POTENTIAL DIFFERENCE

Preliminary studies indicate that this might represent a useful simple screening test for hypermineralocorticoidism.<sup>29</sup> Measurement is by means of a simple skin and rectal mucosa electrode. The rectal potential difference (PD) is increased with mineralocorticoid excess and is probably the result of excess sodium reabsorption. There is also evidence that the PD does not escape from the effect of the mineralocorticoids. A stable PD of 10-40 millivolts is normally present.<sup>29</sup>

#### ADRENAL VENOGRAPHY

Roentgenologic evaluation of the adrenal gland is indeed difficult. Plain abdominal films show only very large lesions. Retroperitoneal air study, which has fallen into disfavor, reveals only the size and shape of the adrenal gland and is easily misinterpreted.<sup>67</sup> Selective arteriography of the adrenal arteries is impossible because of their multiple origin. Moreover, adrenal adenomas are not vascular tumors and are small in size, thus, they are poorly demonstrated by arteriography.

Retrograde venography first successfully revealed an adrenal adenoma in 1962. Because the venous drainage is singular and regular, the success in catheterization of the left adrenal approaches 100 per cent, and the right adrenal 60 per cent to 85 per cent.<sup>12, 59</sup> In 1967, Melby *et al.*, detected seven unilateral adrenal adenomas (0.3-2.3 centimeter) by comparison of aldosterone concentration in blood specimens from the left and right adrenal veins by catheterization. Most escaped detection by palpation or inspection at surgery.<sup>59</sup> The concentration of aldosterone from the involved vein averaged 5.2



$\mu\text{g}/\text{ml}$  of plasma and was more than three times the value from the other side. Melby reported that the functional activity and tumor mass were not proportionate, but Conn *et al.*, reported a direct relationship allowing for many exceptions. Therefore, this question remains unsettled.

These techniques are very helpful since preoperative localization can obviate the need for a trans-abdominal approach or bilateral adrenalectomy.<sup>59</sup> The intra-adrenal veins, however, seem to be uniquely fragile in primary aldosteronism and care must be taken to prevent intra-adrenal extravasation of contrast material or hemorrhage during adrenal venography.<sup>9</sup> At phlebography, an adrenal adenoma stretches the vein or veins in the periphery of the adenoma in an arc-like or circular manner.<sup>78</sup>

The latest series have had great success. Conn *et al.*, since 1968 have visualized the tumor in 11 of 14 patients (80 per cent).<sup>12</sup> Their tests were more reliable when the tumors were larger than 10 millimeters, rather than three to eight millimeters in diameter. By obtaining hormonal samples from both adrenal veins, Horton indicated the correct side of the lesion in all 16 of their patients with primary aldosteronism. Adrenal venography and aldosterone measurement after percutaneous bilateral adrenal-vein catheterization are now accepted approaches and can be definitive tests for an aldosterone-producing adenoma.<sup>43, 59</sup>

#### RENIN

In 1964, Conn *et al.*, published that in primary aldosteronism the PRA was suppressed and was unique for this disease.<sup>20</sup> Since that time, it has become one of the necessary diagnostic criteria. The renin is suppressed because of the chronic volume expansion and cannot be raised as usual by sodium restriction. Normal subjects double their PRA when changing from recumbency to standing for four hours, from mean values of 170 nanograms to 370 nanograms angiotensin/100 milliliters of plasma. After salt restriction the PRA is 565 and 1,145 nanograms. The renin increase is postulated to be caused by acute hemodynamic changes (*e.g.*, a decrease in renal arterial perfusion).<sup>15</sup>

Screening hypertensive patients with PRA has been proposed,<sup>22</sup> but up to 21 per cent of patients with essential hypertension have depressed PRA for unknown reasons.<sup>44</sup> Rovner states that 12 per cent of those with primary aldosteronism may be missed if only one determination of PRA is done.<sup>70</sup> Conn measures PRA after two to four hours of ambulation following three days of a diet containing 10 mEq of sodium per day.<sup>26</sup> He cautions that one must not become too diligent in testing renin suppression. Evidence of suppressed PRA may be obliterated in a patient with an APA, as by adding a benzothiad-

azine to the low sodium program. He has reported a case where such mild suppression was overcome. Thus, one may not detect a patient with primary aldosteronism when screening a patient with essential hypertension.

#### CHLOROTHIAZIDE TEST

The intravenous use of 500 milligrams of chlorothiazide has been studied.<sup>57</sup> The rapid administration of the chlorothiazide would be helpful because of brevity, ease of performance, and potential wide application. However, the urinary electrolyte excretion was found to be unpredictable in primary aldosteronism (only 43 per cent exhibited an excessive kaliuretic response), and it did not consistently stimulate an increase in PRA. It lacked the diagnostic sensitivity or specificity to be used as a screening method and had a high frequency of false negative results.

An experience with an oral furosemide test in 100 patients using 80 milligrams in a single dose to screen hypertensives and measure PRA was also very insensitive. Renin was suppressed in many subjects without tumors.<sup>13</sup>

#### ALDOSTERONE

Aldosterone secretion or excretion is, by definition, inappropriately increased in primary aldosteronism.<sup>56</sup> Sometimes more than one measurement is necessary to demonstrate the elevated aldosterone level. In patients with renal insufficiency, excreted quantities of aldosterone metabolites in the urine are reduced in proportion to an administered dose of labeled aldosterone. Potassium depletion usually does not reduce the aldosterone production by the adenoma, but partial inhibition is possible. Care must be taken in testing because sodium deprivation can cause a normal subject to secrete aldosterone in the range observed in aldosteronism.

Inversely related to the sodium intake, only micrograms of aldosterone are normally secreted daily. The normal basal secretion on a regular diet is 75-150 micrograms per day and excretion, measured in 25 hour urine, is 7-15 micrograms per day.<sup>42</sup> Small variations in endogenous plasma renin may be important in primary aldosteronism because of the large changes in aldosterone secretion it is capable of evoking.<sup>76</sup> Aldosterone, not bound to any specific binding plasma protein, is known only to be derived from the adrenal gland. The metabolite measured in the urine, aldosterone 18-glucuronide, represents 10 per cent to 15 per cent of the secretion rate.<sup>42</sup>

Non-suppression of aldosterone with volume expansion, as with sodium loading, indicates abnormal regulation or autonomous secretion of aldosterone.<sup>56</sup> However, this abnormality only becomes specific for primary aldosteronism when coupled with depressed PRA with stimulation. The measurement of aldoste-



rone is done after volume expansion, to emphasize the difference between normal and primary aldosteronism. The three main ways presently used are: (1) oral salt loading; (2) DOCA administration; and (3) saline infusion. With oral salt loading, the patient is given a high sodium intake (200 mEq Na or 6 grams NaCl daily) for five days before aldosterone excretion is measured.<sup>56</sup>

#### DESOXYCORTICOSTERONE ACETATE TEST

Biglieri *et al.*, used this test because they felt that testing patients with primary aldosteronism by saline infusions and direct volume expansion are inconsistent, potentially hazardous, and difficult to accomplish.<sup>5</sup> Following a five-day control period with 120 mEq Na daily, the patient is given a diet containing 10 mEq Na + 6 grams NaCl (for high sodium intake), and 10 milligrams DOCA is administered intramuscularly every 12 hours for three days. A 24-hour aldosterone urine excretion is measured on the third day. The aldosterone level in an APA is not reduced into the normal range, or an originally normal level will not be depressed. In normal subjects there is a weight gain, some sodium retention, and a mean 70 per cent reduction in aldosterone excretion. In all hypertensives there is a minimal sodium retention and weight gain because of the ability of these patients to excrete NaCl loads rapidly; aldosterone excretion is normal without an adenoma. This is considered a safe and effective procedure.

In 1969, Newton and Laragh studied four proven cases of primary aldosteronism and found that suppression was possible with corticosteroids (for example, dexamethasone 2 milligrams per day).<sup>1</sup> This has been supported by others.<sup>39, 77</sup> This is not completely understood, but may be used to measure the future response to surgery. It also may distinguish a patient with a true primary adenoma—not suppressed by corticosteroids—and one with an adenoma which arises from a previously hyperplastic gland, suppressed by corticosteroids at an early stage and before becoming completely autonomous.<sup>63</sup>

#### SALINE INFUSION

A constant diet of 10 mEq Na and 60-100 mEq K is given for a minimum of five days for dietary equilibration.<sup>32</sup> Two liters of 0.9 per cent NaCl is then given by continuous intravenous infusion from 10 AM to 2 PM on each of two successive days. In normal subjects aldosterone secretion is always below 140 micrograms per day on the second day. Those with primary aldosteronism continue to secrete large amounts of aldosterone. The potassium excretion was also significantly increased in primary aldosteronism, and the serum potassium fell to subnormal levels. It is a good method for evaluating autonomy of aldosterone secretion. Because of the production of hypokalemia, this test can be recommended only

in patients with serum potassium above 3.5 mEq.

Several less commonly applied tests are the albumin infusion, the angiotensin infusion, and the fludrocortisone acetate tests.

#### ALBUMIN INFUSION TEST

This test is used because it produces direct volume expansion. It also rarely lowers the serum potassium. 50-100 grams per day of albumin is infused intravenously for three to four days.<sup>2</sup> There is little or no change in aldosterone secretion or excretion in patients with primary aldosteronism. It suppresses all others (decreased 20 per cent to 46 per cent in secondary aldosteronism and 53 per cent to 95 per cent in normal subjects).

#### ANGIOTENSIN INFUSION TEST

The angiotensin infusion test measures a blood pressure response to a graduated infusion of angiotensin. It is mainly used to test for renovascular hypertension, where the blood pressure change is small (less than 20 mmHg at 4.0 micrograms per kilogram body weight per minute over 5 minutes) due to the already high circulating level of angiotensin. In primary aldosteronism, with no circulating angiotensin, a pronounced blood pressure change can occur. It is not widely used and the reliability in primary aldosteronism is questioned.<sup>7</sup>

#### FLUDROCORTISONE ACETATE TEST

The fludrocortisone acetate test is not yet fully proven, but oral administration of 400 micrograms daily for three days in hypertensive outpatients with hyperaldosteronism seemed to be an effective screening procedure.<sup>6</sup> These patients can then be further evaluated. It effectively suppressed aldosterone production in normal subjects and essential hypertensives with hyperaldosteronism, but failed to do so in those with an APA. There was minimal effect on the excretion of Porter-Silber chromogens.

#### SPIRONOLACTONE TESTS

Spironolactone, a potent aldosterone competing inhibitor, does not usually affect the secretion rate.<sup>56</sup> This drug can be a useful one. It demonstrates that the metabolic disorder is related to an increase in aldosterone secretion. In patients with primary aldosteronism, after the administration of spironolactone, the urine sodium begins to increase within a day or two. Potassium excretion falls below the dietary intake, but the serum potassium shows a delayed rise after several days. If previously elevated, the CO<sub>2</sub> may also fall. This type of response, which is also seen in renovascular hypertension, is not pathognomonic of primary aldosteronism.

A test by Birchall and Batson, which uses spironolactone and dietary manipulation, is described because it is more practical than measuring aldosterone or renin.<sup>7</sup> The physiological basis of the test is

<i>Case and Date</i>	<i>Sex and Age</i>	<i>Duration</i>	<i>Pre-Op mm Hg</i>	<i>Post-Op mm Hg</i>	<i>Family History of ↑ B.P.</i>	<i>Fundus Grading</i>	<i>Chief Complaint</i>	<i>* Symptoms</i>	<i>GTT</i>	<i>IVP</i>	<i>Chest X-ray</i>	<i>EKG</i>
Proven												
1 '59	F, 52	5 yr.	210/100	128/100	Yes	IV	Vision loss— 2° to hemorrh.	W, F, NP, HA	ND	ND	WNL	Hypokalemia
2 '60	F, 43	18 yr.	210/120	160/90	No	I	↑ BP	HA, W	Pos.	WNL	↑ LV	↑ QT
3 '62	M, 62	6 mo.	165/100	None	No	II	CVA	W	ND	ND	ND	ND
4 '64	F, 51	10 yr.	240/130	146/106	Yes	II	↑ BP, hypokalemia	E	ND	WNL	LV ↑	Hypokalemia
5 '66	F, 42	8 yr.	190/120	135/95	Yes	II	↑ BP	E, F, HA, NP, PD	Pos.	WNL	LV ↑	Hypokalemia
6 '68	M, 57	4 yr.	190/110	120/70	No	II	↑ BP	HA	ND	WNL	LV ↑	Hypokalemia
7 '71	M, 29	9 yr.	200/140	112/80	No	II	Workup— 1° aldo.	F, HA, NP, PD, T	ND	WNL	WNL	ST variation
8 '71	M, 57	7 yr.	220/135	160/105 (2 mo.)	Yes	I	Workup— 1° aldo.	F, NP, P, PD, W	ND	WNL	WNL	LVH
Suspected												
1 '63	M, 49	8 yr.	160/105	120/80	Yes	I	↑ BP, weakness	F, NP, PD, W	Neg.	WNL	WNL	Hypokalemia
2 '64	F, 38	1 yr.	210/120	150/90	Yes	I	BP workup	F, HA, PD, NP, W	ND	ND	ND	LAD
3 '64	F, 66	10 yr.	210/110	200/110	No	II	↑ BP, fatigue	F, NP, PD, W	Pos.	Bilat. diffuse disease	WNL	LAD
4 '69	F, 34	3 mo.	180/100	140/80	No	O	↑ BP workup			Left renal cyst	WNL	Hypokalemia
5 '70	M, 73	yrs.	170/105	No Surg.	No	O	Chest pain— 1 month	F, W A	Pos. ND	WNL	WNL	↑ PR RBBB
6 '68	M, 50	18 yr.	180/110	No Surg.	No	II	↑ BP	HA, NP	Pos.	WNL	WNL	Old MI
7 '69	M, 43	2 mo.	230/134	No Surg.	No	II	Workup— 1° aldo.	F, PD, W	ND	WNL	WNL	WNL

#1, #2—proven cases, reported by Manning *et al.*

\* W = Weakness, F = Fatigue, NP = Nocturia = Polyuria, PD = Polydipsia, E = Edema, HA = Headache, P = Paresthesias, T = Tetany, A = Asymptomatic.  
ND = Not Done. WNL = With Normal Limits.

<i>24 Hr. Keto. and Ketogenic Steroid</i>	<i>Salivary Na/K</i>	<i>BUN and Creatinine</i>	<i>Serum Pre-Op (mEq/100ml)</i>				<i>24 Hr.† Urinary—on a High Salt Diet (mEq)</i>		<i>Aldosterone Excretion after Na Loading</i>	<i>Renin After Volume Depletion</i>	<i>Adenoma</i>	<i>Followup</i>	<i>Other Special Diagnostic Tests</i>
Na	K	CO <sub>2</sub>	Cl	Na	K								
WNL	0.82	WNL	143	2.2	38	95	118	60	Inc.		Left—2 1 × 2 cm 4 × 4 mm.	WNL	Body Na—697 mEq excess Body K—434 mEq deficit
WNL	ND	WNL	144	2.8	36	103	15	10	No balance here	ND	Left—2 Right 2 cm	WNL	
ND	ND	39	142	3.3	28	97			ND		ND		
ND	0.50	WNL	146	2.3	37	94	61	141	ND		Right 3 × 2 cm	Died CVA, adenoma at autopsy No follow Lab	
WNL	ND	WNL	145	1.9	45	88	147	119	Inc.	ND	Left	WNL	
WNL	ND	WNL	145	3.2	33	103	66	59	No balance Inc.		Left 1.8 × 1.2 cm	WNL	Positive chlorothiazide test
WNL	ND	WNL	141	2.1- 2.5	36.5	96	70	44	Inc.	Dec.	Right 1.7 cm	WNL	@ Adrenal venogram positive; normal renal arteriogram positive BP response to Aldactone = 200/140 → 130/70
WNL	ND	WNL	143	1.9- 2.8	33	103	94	77	Inc.	Dec.	Left 2.8 × 2.0 cm	WNL	DOCA did not suppress aldosterone; positive BP response to Aldactone = 220/135 → 130/90
WNL	ND	WNL	144	2.1	33	101	153	80	WNL	ND	Hyper- plasia	On re- placement	
ND	ND	37	146	2.7- 4.0	35	91	68	24	WNL	ND	Hyper- plasia	Died MI.	
ND	0.62	33 1.5	143	3.7	30	102	136	178	Mini- mal inc.	ND	Normal (only left)	Ess. Hyper.	
WNL	ND	WNL	139	3.0- 4.1	25	101	155	33	WNL	ND	Normal (only left)	WNL	
WNL	ND	WNL	138	No diuretics	30	93	Poor balance 99	40	Inc.	ND	No surgery	No follow- up	
ND	ND	WNL	141	3.4	27	103	No balance 100	33	WNL	Dec.	No surgery	BP 180/120	Negative IV chlorothia- zide test—No kaliuresis Negative Aldactone test— K clearance didn't ↓ to 50%
WNL	ND	WNL	138	3.5	28	97	No balance 80	100	Poor control inc.	Inc.	No surgery	BP 180/120 Ess. Hyper.	Aldosterone suppressed by DOCA BP ↓ on Aldactone but K clearance was negative

† = all proven patients had either hypokalemia at the time or showed a serum K drop.

Inc. = Increased. Dec. = Decreased.



as follows. In primary aldosteronism, a low-sodium diet causes a low urinary excretion of potassium, and a high-sodium diet does the converse. Potassium repletion resistance is great, but the serum potassium will respond with an increase rather rapidly to a low-sodium diet or spironolactone. In a normal subject on a high-sodium diet the aldosterone secretion is suppressed. Therefore, the potassium clearance or urinary excretion of potassium would be unaffected by spironolactone. On the contrary, in primary aldosteronism the potassium clearance (high on a high-sodium diet) would promptly fall on the addition of spironolactone. The test can be done on an outpatient basis and is as follows. (1) The patient is given a regular diet + 9 grams of NaCl for four days. The serum K and a 24-hour urine K are measured on the fourth day. (2) The same diet + NaCl + 75 milligrams of spironolactone qid is then given for the next three days. The serum K and urine K are again measured on the third day of this regimen. A formula is then derived which was accurate in 4:4 with primary aldosteronism.

$$\frac{\text{Urine K} \times 24 \text{ hour volume}}{\text{Plasma K}} = \text{Clearance K}$$

$$\frac{\text{Pre-spironolactone } C_K}{\text{Post-spironolactone } C_K} = \text{Aldosteronism Ratio}$$

A ratio greater than two (greater than 50 per cent reduction in potassium clearance) was considered diagnostic. In 1968 the authors commented that this test was as simple and accurate as measuring aldosterone excretion and PRA.<sup>8</sup>

#### BLOOD PRESSURE RESPONSE TO SPIRONOLACTONE

Since hyperaldosteronism causes the increased blood pressure in patients with the primary but not the secondary form, the elimination of the effect of aldosterone excess by pharmacologic blockage with high doses (400 milligrams per day) of spironolactone over a long term (three to five weeks) may be useful.<sup>75</sup> In a study of 20 primary and 20 secondary closely matched patients, the increased blood pressure and metabolic abnormalities were corrected in the primary group, but the metabolic-only abnormality was corrected in those with secondary aldosteronism.<sup>75</sup> The preoperative treatment with high-dose, long-term spironolactone will probably accurately predict the response after surgery. All with primary aldosteronism responded to the drug with a normal blood pressure; the average systolic pressure fall was 64 mm Hg (diastolic 32 mm Hg). Only 35 per cent of the secondary group had a blood pressure fall (mean 20/10 mm Hg) and all still had significant hypertension. A significant diuresis (3.6 kilograms body weight) occurred in primary aldosteronism, while the secondary patients lost only 0.9 kilogram. There was a fatigue which gradually subsided in the

primary patients after the weight loss. The progestational activity of the spironolactone caused some sex related side effects in a significant percentage. This is not recommended as a screening test, because it does not distinguish those with essential hypertension and normal aldosterone production from those with primary aldosteronism; however, it does distinguish primary aldosteronism from secondary aldosteronism.

#### COMPUTER

Computers have even been brought into the diagnosis in a study using a multidimensional computer-assisted analysis with circumscribing quadrics.<sup>35</sup> It was correct in all cases of predicting whether or not a tumor was present in retrospect on 34 patients, and in prospectus on two patients with primary aldosteronism. It may be a future help in the preoperative distinction. Patients with adenomas had more profound biochemical disturbances than those with hyperplasia, but there was a considerable overlap, and the groups could not be differentiated without the aid of the computer analysis. The eight variables used were mean plasma levels of aldosterone, renin, Na, K, and total CO<sub>2</sub>, together with mean systolic and mean diastolic blood pressures and age.<sup>35</sup>

#### RADIOIMMUNOASSAY

Aldosterone secretion and excretion rates both have good validity, but have been tedious and time consuming. For this reason, most believe that aldosterone should not be measured unless hypokalemia is present or there are other reasons to suspect primary aldosteronism. Aldosterone could also possibly be measured in the 21 per cent to 25 per cent of hypertensives with decreased renin values when better renin assays are available.<sup>65</sup> What was needed and apparently has now been developed by Mayes *et al.*, in 1970—though not available for general use—was a radioimmunoassay for aldosterone.<sup>43</sup> Five patients with primary aldosteronism were examined and identified.<sup>49</sup> Plasma aldosterone concentration was measured after a two liter intravenous infusion of normal saline in the recumbent position. Normals and the essential hypertensive patients had less than 5 nanograms per 100 milliliters of aldosterone concentration. The researchers claimed that the method was sensitive, rapid, and inexpensive. This could be a very significant development.

#### SPECIAL FORMULA

Last to be reviewed is a new electrolyte formula which, for diagnostic purposes, is claimed to clearly separate patients with primary aldosteronism from the other groups.<sup>14</sup> It may be important because, if diagnostic, it is certainly simple and applicable to many laboratories. It might also be very useful when

other tests are borderline. The patient is prepared for five days on a diet with 10 mEq Na and 60 mEq K daily. Nine-tenths per cent NaCl is then infused, as with the saline infusion test. There is a marked kaliuresis with sodium loading on the second day, which is independent of the rate of sodium excretion, but a function of aldosterone secretion. The serum potassium fell only in patients with primary aldosteronism. Table IV shows the formula, and the results of the test taken from Table II.<sup>14</sup> All categories were completely separated except one patient with renal disease.

TABLE IV  
(UK/UNaV)/SERUM K (SECOND DAY  
OF SODIUM LOADING)

Subjects	Results
Normal (19) .....	0.002-0.035
With Essential Hypertension (62) ....	0-0.035
With Hypertension with renal complications (10) .....	0.005-0.046
With Primary Aldosteronism .....	0.038-0.092

UK = increase in 24-hour K excretion on second day of Na loading over control day.

UNaV = 24-hour urinary Na excretion on second day of Na loading.

Serum K = serum K before Na loading on second day of Na loading.

The patients with primary aldosteronism can be seen to have values greater than 0.038.

## Conclusion

The diagnosis of primary aldosteronism in hypertensives is fraught with many difficulties. The clinical signs and symptoms are helpful, but certainly not to be relied upon. The absence of malignant hypertension and a youthful age are the most helpful. It is now well known that hypokalemia need not be present, but a serum potassium test to detect hypokalemia is still probably the best screening method. A suppressed PRA after stimulation, and an elevated aldosterone excretion or secretion with suppression, are now absolutely necessary to make the preoperative diagnosis. There have been numerous attempts to develop other tests which have met with partial success. The spironolactone tests are clinically useful. Use of the special electrolyte formula may provide a way of making the diagnosis more accurate without elaborate laboratory facilities. The radioimmunoassay for aldosterone may improve the ease of diagnosis greatly.

It is interesting to review the eight patients at KUMC and KCVAH who were diagnosed as having

primary aldosteronism, and those seven suspected very strongly of the diagnosis undergoing surgery. This review is in agreement with the major reviews. It is informative to see the results at institutions not necessarily specializing in this diagnosis. Significant hypokalemia was present in all with an APA—understandable because of the expense of screening by other methods without research facilities. Renal disease was usually adequately ruled out, but urinary steroids were not obtained in five patients, including two who proved to have no adenoma. The study of the urinary electrolytes in both groups was often done in an unbalanced manner; helpful information was often unobtainable. Aldosterone was measured in all except two, who did have adenomas. Before renin assays were available, the diagnosis in four out of seven patients was correct—approximately 50 per cent accuracy. Since its availability PRA has become a valuable adjunct, and could have prevented an operation for at least one patient. The use of spironolactone was valuable in several patients, one of whom also benefited from an adrenal venogram.

The diagnosis of primary aldosteronism can be made easier if one carefully plans the testing required, not omitting any essential examinations. The correct management of the patient's sodium and potassium intake is easily neglected but essential to the interpretation of the tests.

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THE TERM "gallop rhythm" was originated by Professor Bouillaud and propagated by his pupil Potain over a century ago. However, even today, the majority of gallop sounds are unrecognized or misinterpreted. This is unfortunate because gallop rhythm is frequently the only positive physical finding in patients with heart disease and its presence often has important diagnostic and therapeutic implications.

Gallop rhythm is an auscultatory phenomenon in which a tripling or quadrupling of heart sounds resembles the canter of a horse. Tachycardia need not be present. Gallop sounds are low frequency diastolic events related to two periods of ventricular filling; the rapid filling phase (third heart sound, ventricular gallop), and the presystolic filling associated with atrial systole (fourth heart sound, atrial gallop). Both, third and fourth heart sounds, may be present in the same patient. During tachycardia or advanced first degree A-V block, both gallop sounds may occur at almost the identical time, producing a summation gallop. The summation gallop may be confused with the diastolic rumble of mitral stenosis. However, decreasing the heart rate by transient carotid sinus pressure will separate the two gallops and distinguish them from a diastolic rumble.

### Fourth Heart Sound

The fourth heart sound (presystolic gallop, atrial gallop) is a low frequency sound produced in the ventricle during the ventricular filling associated with an effective atrial contraction. The atrial gallop is occasionally heard in patients with no evidence of heart disease, particularly during times of high cardiac output such as occur with thyrotoxicosis or pregnancy. This presystolic sound is also heard in patients with first degree atrioventricular block (prolonged P-R interval on electrocardiogram). However, an audible fourth heart sound usually indicates heart disease and its presence is usually dependent on three factors: (1) effective atrial contraction, (2) unimpeded ventricular filling, and (3) diminished ventricular distensibility (stiff ventricle).

The fourth heart sound is never present in patients

with atrial fibrillation, and is an uncommon finding in patients with diminished left ventricular filling due to moderate or severe mitral stenosis. It is usually absent in patients with constrictive pericarditis. The atrial gallop generally signifies reduced ventricular distensibility and is frequently but not always associated with an increase in ventricular end-diastolic pressure.

The presystolic gallop may originate in the right or left ventricle. Left-sided fourth heart sounds are commonly present in patients with diastolic hypertension, severe aortic stenosis, myocardiopathies and acute mitral regurgitation. Most patients with an acute myocardial infarction and sinus rhythm have a prominent fourth heart sound. A presystolic gallop is a frequent finding in patients with coronary artery disease, but may be only heard during an episode of angina.

Left-sided fourth heart sounds are frequently accompanied by visible and palpable presystolic distension of the left ventricular apex. This is best observed with the patient on his left side. On phonocardiogram, the low frequency vibrations of the atrial gallop are coincident with the presystolic "a" wave of the apexcardiogram. The left-sided fourth heart sound is best heard by using light pressure with the bell of the stethoscope. It is maximal in intensity at the left ventricular apex with the patient in the left lateral position. If patients are not turned to this position during auscultation, over 50 percent of atrial gallops will be undetected. The left-sided presystolic gallop is usually most prominent during the expiratory phase of respiration.

The atrial gallop increases in intensity and the fourth heart sound—first heart sound interval lengthens as the result of an increase in ventricular filling, a prolongation of atrioventricular conduction or a decrease in ventricular distensibility. During bedside auscultation the left-sided atrial gallop is usually accentuated after coughing and during mild supine exercise. It also becomes prominent during a sustained handgrip contraction. During these maneuvers the fourth heart sound-first heart interval frequently increases in contrast to splitting of the first heart sound, which becomes less evident with the increase in heart rate.

Right-sided fourth heart sounds are frequently present in patients with right ventricular hypertrophy

\* Department of Medicine, University of California Medical Center, San Diego, California.

This article was prepared for the JOURNAL by the Kansas Heart Association.



secondary to either pulmonary hypertension or pulmonary stenosis. They are commonly accompanied by a prominent presystolic "a" wave in the jugular venous pulse and a parasternal or subxiphoid right ventricular lift. These low frequency sounds are heard best at the third to fifth left intercostal spaces and often increase in intensity during inspiration.

Both the right- and left-sided fourth heart sounds can often be distinguished from the two components of the first heart sound by applying increasing chest wall pressure with the bell piece of the stethoscope. As pressure is increased, the bell functions as a diaphragm and low frequency sounds such as the fourth heart sound usually decrease in intensity or disappear. In contrast, the high frequency components of the first heart sound persist unchanged.

### Third Heart Sound

The third heart sound (ventricular gallop, protodiastolic gallop) is a low frequency sound produced in the ventricle in early diastole during passive rapid filling. This early diastolic sound is a frequent finding in normal children and young adults, and also in patients with a high cardiac output. However, the presence of a third heart sound in patients over the age of 40 generally indicates ventricular decompensation, or A-V valve regurgitation. The ventricular gallop, like the fourth heart sound, can be produced in either ventricle and is heard best with the bell piece of the stethoscope. The left-sided third heart sound, commonly present in patients with left heart failure or mitral regurgitation, is heard best on the left ventricular apex with the patient in the left lateral position. This low frequency sound is most prominent during expiration. The right-sided ventricular gallop, frequently present in patients with right heart failure or tricuspid regurgitation, is heard best at the lower left sternal border and increases with inspiration. It is often accompanied by a prominent late systolic "v" wave in the jugular venous pulse, the systolic murmur of tricuspid regurgitation, and a large liver which pulsates in late systole. The third heart sound occurs later in diastole than the higher frequency A-V valve opening snap from which it must be distinguished. The ventricular gallop, unlike the opening snap, decreases or disappears when the patient assumes the upright position.

## Vox Dox

Dear Vox Dox:

There is a need for more information on the biting insects because severe reactions do occur from biting as well as stinging insects. There is also a need for case reports of reactions and results of hyposensitization.

I would like physicians to send me case reports of patients who have had allergic reactions to biting insects and the results of skin testing and hyposensitization, if these were done. I would appreciate detailed case reports if possible, but a summary would be all right.

Would you print the following announcement in the JOURNAL OF KANSAS MEDICAL SOCIETY?

"I am compiling case reports of allergic reactions to biting insects, *i.e.*, mosquitos, fleas, kissing bugs, bed bugs, gnats and flies—including horsefly, sandfly, deerfly. I am also interested in reactions to fire ants.

"I would like physicians to supply me with case reports of those patients who have had reactions to such insects. Include in your reports the history of the type of reaction and complications, if any; the immediate treatment; if desensitization were attempted, what were the results? Send to:

Claude A. Frazier, M.D.  
4-C Doctors Park  
Asheville, N. C. 28801."

CLAUDE A. FRAZIER, M.D.  
Asheville, North Carolina

**SUPPORT KaMPAC**  
**1972**

### MOVING?

*When you change your address, be sure to notify the JOURNAL, preferably one month in advance. In that way, you'll get every issue on time. Simply print your name, old address, and new address, on a postal card and send to: THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612.*

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## *The President's Message*

Physicians are members of a magnificent brotherhood. They have passed through the most trying ordeals and apprenticeships. The group is composed of persons owning the finest of minds, and adhering to the highest ethics. They are individually and collectively the most self-critical of any of the professions. We are self-policed. The healers have always been socially aware.

The bonds of brotherhood span politics, religion, sex, and even time. There is less difference between our "right" and our "left" than between a physician and any member of any other group. We have more affinity with Maimonides—across barriers of a millennium, religion, and geography—than we have with any man of another trade in our own time. We still bleed for the injustices of the Hammurabic Code to our fellow physicians.

The fraternity of physicians began before the recording of history, has never been disrupted, and has never lost its idealism. It is surely a great thing and one to be proud of. Our Society is part of and should truly represent that brotherhood.

It is customary for a new president's first communicate to express his gratitude and humility in the face of his new responsibility. But it is impossible. There are no words that can convey the large pleasure of being selected to try to lead an illustrious peer group. How can mere words convey the awe and fear one feels when faced with such a diversity of projects, a multitude of fine minds and honorable men, and with so great a tradition of brotherhood?

If it cannot be well said, a new president can yet promise to try to speak and act for you from the common ground which lies between the extremities of all of our opinions, and in the traditions handed down from antiquity.

Our Medical Society needs all of your opinions, for without them our elected cannot find this de-



nominator which is acceptable to all. Write to any of us; talk with us; phone us; your Society needs to know of your individual problems and your comments. Your Executive Committee, your Councilors, your Commission Chairmen, and your Staff need and want to hear from you. Communicate! For this is the only way your Society can represent you well, and further the cause of our Medical Brotherhood.

A stylized, handwritten signature in dark ink. The signature reads "Kenneth L. Galum MD" in a cursive script. The "K" is large and loops around the first part of the name. The "MD" is written in a slightly different, more upright script at the end.

*President*



## Editorial COMMENT

Man's struggle *ad astra* has been through a lot of *aspera* of his own making. If there is a way to complicate the endeavor, he will find it, which may account for the rather slow progress he has made in altering some of the basics as well as that *deja vu* feeling that he has been past that spot before. He is bemused to find, when a new approach is introduced, that he wasn't doing as well as he thought and he must purge himself of the old method. Inevitably, the new proves to be something short of perfect and he must attempt to readjust to another new. If the pace of change isn't too fast, he may have time for a wistful thought that it would be nice to be able to hold on to a little of the old that really was worth while. Recognizing the dangers in the system, he submits himself to controls and restrictions and finds that the security deriving from the system leads to the insecurity of being a little less his own man.

One pattern has become almost stereotyped. An official or quasi-official group reports that feeding duckbilled platypi high concentrations of Vitamin Q results in an increase of parajax (5, 7 isoglop) reprobate which makes their pi even platter. The Moose Pass *Zeitung* gives this a front page spread and the public demands mass screening programs to determine their reprobate levels. Physicians are advised to discontinue the prescription of Vitamins N through T, and pharmaceutical houses are ordered to recall all Vitamin Q on the market. The last paragraph of the story does mention that the comparable human dose would be two tankcars daily and, anyway, the platypi on the placebo were more severely affected, but no one read that far, except the typographer on the *Zeitung*. The physician, who knew Vitamin Q didn't do any good but was safe for people who demanded *some* medication, thumbs through his PDR to find some equally satisfactory, safe, and as-yet-unexposed item to supplement his psychotherapy.

If it has occurred to you that this may be a thinly-veiled reference to some of the activities of the FDA, you just may be right, but it is not our intent to belabor that agency which does many important, valuable, and usually thankless jobs. It does seem, however, that there should be some way of programming their computer with a factor or coefficient re-

flecting practical, supportable medical experience so that their pronouncements would have a little more relevance to the patient across the desk or in the bed. No one would advocate the promotion or even general availability of any therapy that is not adequately tested, but withholding the blessing of authority until every conceivable danger is nullified in a time of constantly altering environmental conditions, genetic mutations, and ethnic coalescence seriously obstructs therapeutic progress.

It is difficult to estimate, for example, the medical value of hexachlorophene, but it must be considerable. True, soap and water has served well for a long time, but hexachlorophene does some things better. Rats don't seem to thrive on hexachlorophene, but it is all right with us if they just use soap and water. Now it seems that the word is out in Staph Country, and the cocci have stormed the barricades with the result that the restriction on hexachlorophene has been rather lamely assigned to the weigh-it-against-its-anticipated-value class. Chlormadinone, despite a large background of clinical safety and effectiveness as a component in a sequential contraceptive pill, was found to produce benign tumors in the breasts of female beagles (in a dosage well beyond human usage). Result: it is off the market and the world is again safe for flat-chested beagles. (We suspect that with the competitive prices for the Pill being what they are, Eli figured it wasn't worth the hassle.)

How can we temper the new information with the old experience? In the past, the experience of the individual physician with a given regimen—pharmacologic or otherwise—was a prime determinant of his method of practice. It wasn't always effective and occasionally was devastating, but there was still an acceptance on the part of his patients that life was vulnerable and the physician was limited and human. Beyond his efforts, there was a certain amount of spiritual support and after that—well, the medical guarantee hadn't been invented and everyone had to go sometime. Ironically, the effect of a more scientific approach has been to induce an expectation of constant good health, immediate relief from disease, and an unlimited life expectancy. The partial achievement

(Continued on page 276)



# Medical-Legal Page

## Pregnancy After Tubal Ligation

A woman who sued a physician because she became pregnant after sterilization was denied damages. An Illinois trial court directed a verdict in favor of the physician.

When the woman was pregnant with her fifth child she requested sterilization because her husband was irregularly employed. After undergoing tubal ligation, the woman again became pregnant and gave birth to a sixth child.

The woman and her husband brought action against the hospital and the physician who performed the sterilization, contending that after the sterilization she had been given a warranty that she could enjoy sex without fear of pregnancy. In addition, she claimed injuries in the need to support another child, in having had to suffer the pains of childbirth, and in having "hindered sensibilities" about sex.

An attorney for the physician contended that a sterilization guarantee had to be a specially written contract. At the end of the trial, the jury brought in a directed verdict of not guilty for the physician.—*Rogala v. Silva* (Ill.Cir.Ct., Cook Co., Docket No. 67L-12275, Jan. 18, 1972)

## Failure of Vasectomy Results in Unwanted Child

A patient who fathered a child after undergoing a vasectomy was entitled to recover the costs of a second vasectomy and the associated pain and suffering, according to an Ohio trial court. The jury awarded the patient \$7,500, which included the costs of raising a normal child.

The patient had married a woman who was 39 years of age. She was not in the best of health, having been subjected to two prior major abdominal surgical interventions. Both parties had agreed that they should not have any children. The husband, therefore, underwent a vasectomy. He was not instructed by the physician to return for a test to determine his fertility status. Shortly after the vasectomy, the patient's wife underwent another major abdominal operation.

Some months after the vasectomy, the patient's wife became pregnant. A urologist determined that the patient was still fertile. The wife became increasingly ill during the pregnancy. On January 8, 1970, it became necessary to perform exploratory surgery of her liver. On January 14, 1970, she gave birth to a normal baby boy of eight months' gestation. On January 15, 1970, it was determined that

the wife had lupus erythematosus, and on January 18, 1970, she expired.

Suit was brought on behalf of the husband for the costs of a second vasectomy and the associated pain and suffering and the costs of raising an unwanted child. A second suit was brought on behalf of the estate of the wife for wrongful death and conscious pain and suffering.

At the trial, various treating physicians were called on behalf of the husband and the estate of the wife. The physician who was sued produced no witnesses but relied on the cross-examination of all witnesses. The jury returned a verdict for the husband but denied recovery in the suit brought on behalf of the wife's estate.—*Deck v. Payne* (Ohio, Ct. of Common Pleas, Case nos. 20730 and 70-1826, Oct. 15, 1971)

## Editorial Comment

(Continued from page 275)

of these expectations has already created stupendous problems—where to put everybody, how to feed them, how long to keep them around.

What we're talking about, of course, is defensive medicine. Not the usual connotation of the overutilization of diagnostic and therapeutic efforts to protect the practitioner from possible legal action, but defensive against any and all threats. But what medical practice is not defensive? Even in its highest form, the active treatment of a patient is defensive against the offense of his disability. Preventive medicine is the ultimate in defensive medicine. The FDA and other regulatory bodies act defensively when they restrict some therapy (on information out of context with human usage), not only to protect the patient from unsafe therapy but themselves from political repercussions. The physician, despite personal experience and conviction, complies and defensive medicine becomes as certainly the withholding of desirable therapy as much as the prescription of unnecessary therapy.

This, then, seems to be the attitude of the times. There must be no risks. There must be no threats. There must be informed consent to account for any eventuality. There must be guaranteed response as measured against a common standard applicable to all regardless of context. New rules enter in the name of progress, and we deny experience out of fear that it may not be relevant to the future. Surely, between the anoxia of excessive restriction and the intoxication of insufficient restriction, we can find a sensible level of function. Otherwise, we shall find ourselves in Dante's First Circle along with those tepid sinners, the opportunists, who "have lost the good of intellect."—*D.E.G.*



## *Personalities*—IN KANSAS MEDICINE

R. S. McKee, Leavenworth, was elected senior member in the American Academy of Anesthesia at a recent meeting held in Porto Rico.

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Daniel L. Azarnoff, Kansas City, has been appointed to the Council on Drugs of the American Medical Association.

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William R. Roy, Washington, D. C., has received the 1971 Medical Tribune Health Award, presented by Medical Tribune International, a weekly medical newspaper with worldwide circulation.

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Francis T. Collins, Topeka, participated in a recent workshop dealing with "The Expanded Roles of Today's Nurse."

---

H. C. Krueger has established his practice in Great Bend. He is specializing in pediatric medicine, hematology, and oncology.

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Hilbert Jubelt, Manhattan, was elected an officer in the Riley County Unit of the National Council on Alcoholism and Drug Education.

---

Ralph R. Melton, Marion, presented a bronze plaque of appreciation from the medical staff to the Saint Luke Hospital.

---

Perry U. Hunsley, Belleville, has accepted a position on the surgical staff of the Akron General Hospital, Akron, Ohio, beginning July, 1972.

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William G. Chappuie, Independence, addressed the Lions Club on the subject of heart treatment.

Richard A. Gruendel, Kansas City, was included in the delegation to study the Jacksonville, Florida emergency rescue system.

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Justin A. Blount, Larned, is retiring from practice after 50 years. Dr. Blount was graduated from the University of Kansas School of Medicine in 1921. He established his practice at Burdett, Kansas the following year.

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E. J. Chaney, Belleville, addressed the Republic County Unit of the American Cancer Society as its Medical Advisor. The newly initiated program, "A Reach to Recovery," is conducted by volunteers who are former breast cancer patients.

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E. Dean Bray, Minneapolis, received a Rheumatology Fellowship grant from the Arthritis Foundation. Participation in the professional training program is open to all physicians practicing in Kansas.

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Loren J. Humphrey, Kansas City, presented a paper on Immunity and Cancer, during the recent American College of Surgeons meeting held in Miami.

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Wendell K. Nickell, Salina, was re-elected chairman of the Salina Cultural Arts Commission.

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The Kansas Council on Aging designated Kellogg F. Bascom, Manhattan, the 1972 Distinguished Older Citizen of Kansas. He was presented the award by Congressman Bill Roy. Dr. Bascom, who celebrated his 80th birthday recently, came to Manhattan in 1935 to start a medical practice. He was instrumental in the planning and construction of a Manhattan nursing home and the Manhattan Medical Center.

## Diaphragmatic Rupture

(Continued from page 253)

scribed to us, our suspicion of diaphragmatic pathology might have been aroused sooner.

Diagnosis was made by the upper gastrointestinal x-rays. We failed to detect gastric borborygmi in the left chest. Differential diagnosis of the left chest pain in the postoperative period usually concerns coronary occlusion, pulmonary atelectasis and infarction, pleurisy, and subphrenic abscess. Plain chest x-rays had demonstrated atelectasis but failed to substantiate the acute herniation.

### Acknowledgement

The authors wish to thank Dr. Samuel Zelman, Acting Chief of Staff, Topeka VA Hospital, for his assistance in the preparation of this paper.

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## Trauma Conference

(Continued from page 258)

radiologists had no hesitation in doing it this way, did they?

**Dr. Reckling:** How about a bruit? Do you usually hear a bruit with these injuries?

**Dr. Reis:** In answer to your second question, you usually do hear a bruit with any type of a constricting lesion in the aorta, such as a coarctation. This traumatic lesion behaved essentially like a coarctation of the aorta.

**Dr. Haskey:** Yes, he did have a bruit heard best posteriorly at about the left sixth or seventh rib.

**Dr. Reckling:** Dr. Haskey, how has the patient done?

**Dr. Haskey:** Very well. His hypertension abated immediately following repair of the aorta. His pulmonary problems have continued, although they are improving day-by-day. He still has some remaining orthopedic problems. The open transverse fracture of his left femur, as stated, was initially treated with debridement and balanced skeletal traction. We have elected to continue with this method of treatment. The severe comminuted fracture of his right patella will require a total patellectomy and repair of the quadriceps mechanism.

### Addendum

This patient's pulmonary problems have been resolved, and his blood pressure remains stable at normal levels. He has subsequently undergone a total patellectomy, and also after six weeks of skeletal traction to his left femur, he was placed in a hip spica. He has been discharged from the hospital to be followed as an outpatient.

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## NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

Thomas Billings, M.D.  
400 West 4th  
McPherson, Kansas 67460

Donald B. Bletz, M.D.  
258 New Brotherhood  
Bldg.  
Kansas City, Kansas 66101

Robert F. Cavitt, M.D.  
9119 West 74th  
Shawnee Mission, Kansas  
66204

Joseph H. Depoe, M.D.  
324 State Bank Bldg.  
Winfield, Kansas 67156

Fred S. Dozier, M.D.  
4 West Main  
Herington, Kansas 67449

Pauline F. Kernberg,  
M.D.  
The Menninger Foundation  
Topeka, Kansas 66606

Richard J. Reece, M.D.  
617-D United Building  
Salina, Kansas 67401

Francisco Reyes, M.D.  
1300 S. Main  
Ottawa, Kansas 66067

Herbert M. Rubin, M.D.  
7301 Mission Road  
Shawnee Mission, Kansas  
66208

James W. Wilson, M.D.  
Coffeyville Memorial  
Hospital  
Coffeyville, Kansas 67337

SUPPORT KaMPAC  
1972



# Woman's Auxiliary

## *. . . Auxiliary Annie Goes to AMPAC*

Buddha or Lao Tzu, or someone, talked a lot about the great "I am." Annie isn't so concerned with that as there's nothing very great about her, except for a few middle-aged portions of her anatomy, but she is concerned with the great "AM" . . . AMPAC, that is.

Now don't turn me off. It isn't fair, because I listen to you . . . well, most of the time, anyhow. AMPAC is important, even if you are among the minority that doesn't think so. In the first place, it lets you be "You" because it's nonpartisan. In the second, it is the one real effort that we can all help with to try to help control the inevitable health plan coming up this year.

But let me tell you about the meeting. If there's even an ounce of patriotism in your body, you couldn't help but be impressed and inspired with the AMPAC meeting in Washington, March 11-12. Of course, Annie is so patriotic that she gets a lump in her throat when a flag goes by in a parade, but she staunchly maintains that even you hard-hearts would have liked the AMPAC meeting.

The Saturday morning workshop started with the United States Air Force Band playing patriotic music while the delegates assembled. Even the splendor of the beautiful silk flags in the Hall of Nations, at the John F. Kennedy Center for the Performing Arts at the reception the evening before, couldn't begin to hold a candle to the awesome splendor of the Joint Armed Forces Color Guard that opened the Saturday session. The lights were turned out and a single spotlight beamed down the center aisle of the ballroom. The band played a solemn march as the flags were carried reverently through the darkened room by the military color guard, who were silhouetted against the single light. It was almost as if we held our breath in awesome anticipation of what would happen next. As the color guard turned, the spotlight was like a burst of sun on our country's flag. After the color guard withdrew, the band played the national anthem. You'd have been proud of us. It's been years since Annie heard any group sing our anthem with such feeling. If there was any faltering at the high notes, it didn't matter, because the whole bunch sang like they meant it!

Annie learned a lot at that workshop, but you'll have to read the AMPAC Board's special report to get all the details. Briefly, the theme of the meeting was, "Where We Are and Where We're Going." First, a panel comprised of Arthur A. Lampert, M.D., chairman of the AMA Council on Legislation; U. S. Senator Clifford P. Hansen; U. S. Representative William R. Roy; and Jerome F. Brazda,

Editor of "Washington Report on Medicine and Health," were moderated by Clinton S. McGill, M.D., a member of the AMA Speakers Bureau on National Health Insurance.

Dr. McGill explained why the AMA backs Medicare, saying that "it's more proper to build on what we have than to change it all . . .," and stating the reasons why the AMA feels it is a step forward in improving health care. In giving his reactions to the bill and urging action, Dr. Lampert told the group that "We are at a central area with HMO and the Ways and Means Committee . . . this will get better or worse in a year or less."

Senator Hanson feels that the most important principle is that federal help should be to those who need it. He rejects the "all for all" attitude, and says to build on the present system with improvements to meet the needs of indigents. He also stresses outpatient care, preventive medicine, and catastrophic care for all, with a need for coinsurance for those who can afford it, and adequate peer review. He said that "It's up to you to let us know you support these."

Dr. Roy stated that he was not in favor of any money going to chiropractors. "We are under fire," he said, "justifiably in some areas . . . there are shortages in many areas . . . not the fault of the doctors, particularly." He favors maternal and child health care. In answering "where we are going," he thinks that there'll be federal financing of Medicaid, a similar program for the indigent, improvements in medical care for disabled under Social Security, mandated health coverage of some kind, and peer review standards passed.

"Something will pass this year in Congress," he said, "However the time element may interfere." Dr. Roy has some agreement with the Kennedy Bill and likes HMO. "Get one (a bill) that works, or we'll have a national health scheme," he advised.

Mr. Brazda asked if our present insurance system "really leads to the bureaucracy that we all dread," and told the group not to rule out a Mills-Kennedy liaison.

The second panel Saturday morning concerned the political climate of 1972. Richard M. Scammon, Director of the Election Research Center, Governmental Affairs Institute, spoke on the "Attitudes and Views of Americans," saying that their politics are personal and parochial, and concerned primarily with personal problems. He said that many former loyal party members are now "ticket splitters" or independents,

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## Small Hospital Emergencies

(Continued from page 255)

inal pain and had several episodes of vomiting during recovery, he never had any bowel sound changes or any changes of his abdomen to palpation. He had a normal bowel movement on his sixth postcoronary day.

### Summary

Coronary care units in large medical centers with highly trained nurses and house staff have lowered the mortality rate in cases of acute myocardial infarction.<sup>1</sup> The purpose of this paper is to report the experience in making practical emergency cardiac care and resuscitation to the patient in the small rural community hospital. The case here illustrated took place in a 25-bed hospital, in a county of 6,700 residents.

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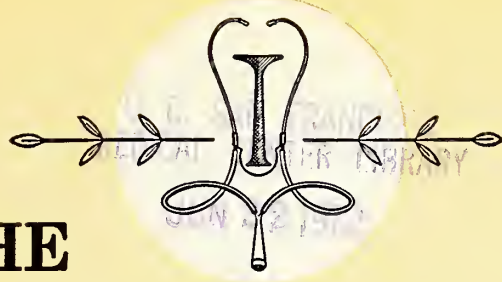
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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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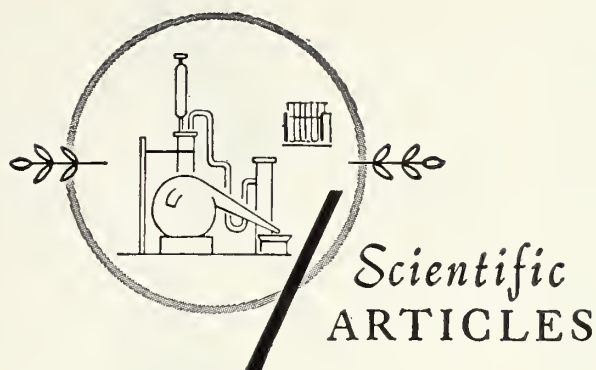
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# Anomaly Complicating Operation

## *Ruptured Abdominal Aneurysm and Persistent Left Inferior Vena Cava*

THOMAS V. THOMAS, M.D.,\* *Kansas City, Kansas*

SURGICAL procedures for reconstruction of the abdominal aorta and its intraabdominal branches are undertaken frequently. Retrograde or translumbar aortography is obtained in patients with stenotic and occlusive vascular disorders prior to surgical intervention. Angiographic opacification of the abdominal aorta usually is not required for diagnosis and treatment of aneurysms of the abdominal aorta. Therefore, surgical exploration brings to light some of the rare arterial and venous anomalies only at the time of vascular reconstruction. Until recently, venous anomalies of the inferior vena cava and renal vein interested only the anatomists. Reconstruction of vascular disorders is complicated by such unexpected findings with multiplication of the morbidity and mortality. In the past, the author has reported experiences with associated findings such as retro-aortic left renal vein, levoverion of the right kidney, and ureteric involvement by hypogastric aneurysms.<sup>1, 2, 3</sup>

During a recent surgical exploration for a large abdominal aortic aneurysm, the author encountered a persistent left inferior vena cava crossing over the neck of the aneurysm. This finding was complicated by the presence of a recent rupture and false aneu-

rysm formation in the left paraaortic space extending up to the esophageal hiatus. A review of the autopsy studies reported in the past revealed that such anatomic variations of the inferior vena cava are far

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**With the increasing application of vascular reconstruction, various anomalies of the vena cava and renal vein are brought to the surgeon's attention. Such anomalies have been documented in the past during cadaver dissections. Surgical techniques utilized in the successful management of a patient with a large abdominal aneurysm, and a paraaortic false aneurysm from a recent rupture complicated by the presence of a persistent left inferior vena cava, is described.**

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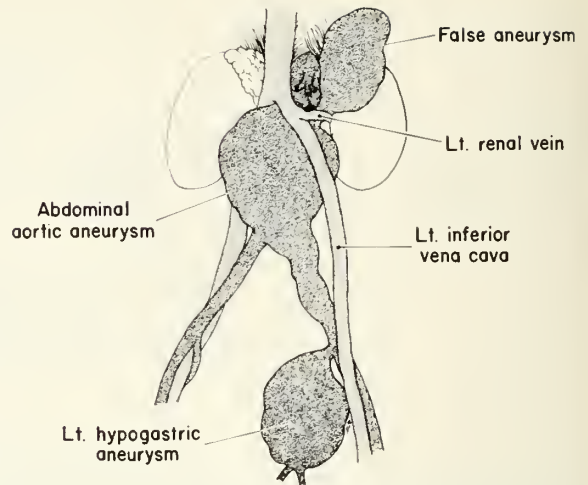
more common than suspected, and are likely to be encountered by surgeons because of the increasing usage of vascular reconstruction and venous angiography. Successful management of a complicated abdominal aortic problem, when associated with a persistent left inferior vena cava, forms the basis of this report.

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### Case Report

A 72-year-old Caucasian male patient was admitted in June 1971 to the Veterans Administration Hospital, Kansas City, Missouri, for evaluation of a pulsatile abdominal mass. An abdominal examination showed a pulsatile mass in the epigastrium, which measured approximately 10 x 8 centimeters. Except for an absent left femoral pulse, other peripheral pulses were normal. Plain x-ray films of the abdomen revealed a thin curvilinear calcification to the right of the vertebral bodies, but the left border of the aneurysm could not be defined. A review of this patient's history showed that he was admitted to a hospital in his home town three months earlier for back pain, shock, and poor kidney function. Upon admission to that hospital, he was found to have suffered a stroke, which improved with supportive therapy. Laboratory studies for kidney and liver function were within the normal range at the time of evaluation here.

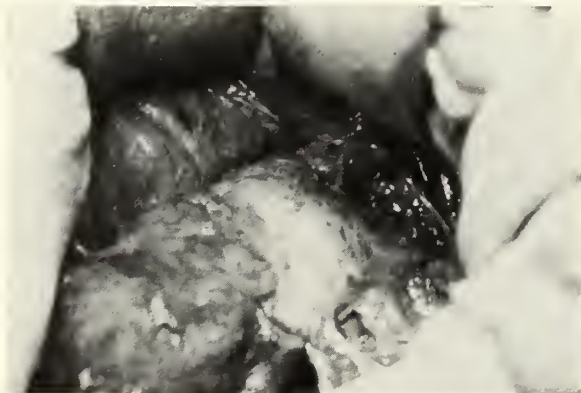
The patient was explored through a midline abdominal incision for resection of his abdominal aortic aneurysm. When the retroperitoneal space was opened, a bluish structure comparable to the diameter of his small bowel was found stretching across the aneurysm at the level of his renal vessels (*Figure 1*). Upon further dissection, this was found to join the inferior vena cava superiorly. The left renal vein joined the persistent left inferior vena cava. There was an associated aneurysm of the left hypogastric artery also. The abdominal aortic aneurysm itself extended to the esophageal hiatus and was felt to be unresectable without forbidding mortality. On retraction of the left inferior vena cava and examination of the abdominal aorta above the renal arteries, the aorta appeared to be of normal caliber, despite the presence of a large pulsating mass immediately adjacent to and to the left of it. On compression of the aorta against the vertebral bodies at the level of



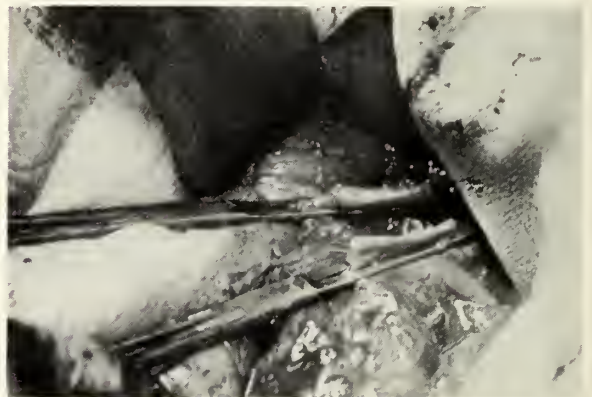
*Figure 2.* Artist's illustration of the findings in the operating room. The right and the left inferior vena cava were of equal caliber.

the origin of the superior mesenteric artery, the pulsations in the distal abdominal aorta and in the para-aortic mass extending to the esophageal hiatus disappeared (*Figure 2*).

The left inferior vena cava was divided then and retracted laterally for additional exposure (*Figure 3*). A vascular clamp was applied above the renal arteries through a slit-like space created by gentle blunt dissection. Both common iliac arteries were occluded, and the aneurysm was opened longitudinally. At the level of the renal arteries, the left posterolateral wall of the aorta was found to have a defect that admitted the surgeon's index finger into the left paraaortic mass which extended cephalad to the diaphragm. The aneurysm, as well as the false aneurysm, had a large amount of atheromatous debris and clots in it. The proximal end of the aortic graft was beveled to reach beyond the defect in the pos-



*Figure 1.* Appearance of the persistent left inferior vena cava stretching across the neck of the abdominal aneurysm. The renal vein from the left kidney can be seen entering this structure.



*Figure 3.* The persistent left inferior vena cava was divided for proximal control of the abdominal aortic aneurysm. After the prosthetic graft was wrapped with the wall of the aneurysm, the left inferior vena cava was reanastomosed.



terolateral wall of the aorta. The anterolateral edges of the graft were sutured to the inferior borders of the renal artery openings from the abdominal aorta. Then the right limb of the bifurcated graft was anastomosed end-to-end to the common iliac artery. The left common iliac artery was ligated, and the other limb of the graft was anastomosed to the left common femoral artery. There was no urinary output for a 23-minute period, during which the abdominal aorta was clamped above the renal arteries. Upon release of that clamp and restoration of flow, there were good pulsations in both renal arteries and excellent urinary output.

The left external iliac artery distal to the aneurysm was ligated. On restoration of the distal flow there was no pulsation in the aneurysm of the left hypogastric artery. The wall of the abdominal aneurysm was used to wrap the prosthetic graft. On palpation at the end of the procedure the false aneurysm was found to have decompressed itself with no pulsation in it. The left inferior vena cava was reanastomosed anterior to the abdominal aorta, and the retroperitoneal space closed. Postoperatively this patient had no elevation of BUN or creatinine. Intravenous pyelography during the follow-up period showed prompt bilateral excretion of dye. Inferior vena cavography was done by needles placed into both femoral veins. Although it showed opacification of both inferior vena cavae, they were unsatisfactory for reproduction.

### Comments

In 1749 Winslow is believed to have provided the most thorough and remarkable description of the anatomic variations associated with the vertical as well as with the horizontal intercommunicating channels of the lumbar veins. Almost two centuries later, Seib elaborated on such anatomic details based on his dissections of 41 cadavers.<sup>4</sup> The inferior vena cava is derived from four embryonic vessels, namely the posterior cardinal, the right supracardinal, the right subcardinal, and the right vitelline veins. According to Seib, the left inferior vena cava is derived from the left paraureteric or supracardinal vein; but it is possible for it to develop from the lumbar portion of the left medial sympathetic vein. A persistent left inferior cava is considered to be a derivative of the former vein if it lies ventrolateral to the lumbar arteries and to the rami of the sympathetic trunk, and from the latter if it lies dorsomedial to the sympathetic fibers and ventrolateral to the lumbar arteries. If the left internal spermatic vein drains into the persistent left inferior vena cava, the latter vessel probably takes its origin from the left paraureteric vein; should the left sex vein drain into the left renal vein to the left of the junction with a persistent vena cava, the relationship suggests that the left

caval vein is derived from the left medial sympathetic vein.

Recently Davis,<sup>5</sup> Pick,<sup>6</sup> and their co-workers have dissected large numbers of cadavers to ascertain the anatomic variations of the visceral, renal, and lumbar veins. During 100 cadaver dissections Davis found three instances of persistent left inferior vena cava. There was only one case in their series, however, which had a large persistent inferior vena cava that was thought to be derived from the left supracardinal vein. In his report of a series of 876 cadaver studies, Gladstone<sup>7</sup> estimated the incidence of a persistent left inferior vena cava to be 0.23 per cent. Another report of 500 cadaver studies, which included 437 males and 63 females, found only two patients with persistent left supracardinal veins. These 500 cases consisted of 394 Caucasians and 106 Negroes.<sup>8</sup> The presence of a large anomalous venous structure across the neck of the aneurysm complicated dissection and proximal control. The persistent left inferior vena cava, however, was adherent to the aneurysm only loosely and was mobilized easily. Szilagyi *et al.*,<sup>9</sup> have described the advisability of temporary transection of the left renal vein during abdominal aortic and renal artery reconstructions.

The case reported here was further complicated by the presence of aneurysm extending proximal to the site of the rupture and a left hypogastric artery aneurysm. The recognition of a cleavage plane between the suprarenal abdominal aorta and the false aneurysm was coincidental. Intraluminal occlusion of the abdominal aorta from a right common iliac arteriotomy was entertained for temporary occlusion. The various techniques of this have been described previously.<sup>10</sup> Reimplantation of the left renal artery is another technical consideration when one encounters damage to the aorta posterior to it. Beveling of the graft posteriorly avoided the need for such a step, however, and minimized the duration of the occlusion of the aorta above the renal arteries. Although reanastomoses of the persistent left inferior vena cava was not essential for preservation of left renal function, it was undertaken because of the technical simplicity after the aneurysm was decompressed and replaced with a graft. Approximation of the wall of the aneurysm between the synthetic graft and the persistent left cava eliminated the danger of fistula formation between the graft and the vena cava. Wrapping of the graft completely with the wall of the aneurysm is a step routinely undertaken by the author to avoid the formation of false aneurysms and erosion into the gastrointestinal tract (endoaneurysmal graft replacement for abdominal aneurysms).<sup>11</sup>

(Continued on page 303)



# Echocardiography

## *Clinical Applications of Echocardiography*

J. F. KING, M.D., W. GRAY, M.D. and MARVIN DUNN, M.D.,\*

*Kansas City, Kansas*

ALTHOUGH the use of ultrasound in the study and diagnosis of cardiovascular disorders is relatively new, sufficient experience has accumulated to substantiate its use as a dependable diagnostic tool. The material included represents a review of the principles of echocardiography and their clinical application.

### **Basic Principles of Pulsed Ultrasound**

When sound waves attain a frequency above 20,000 cycles per second, they cannot be detected by the human ear and are regarded as ultrasound. Ultrasound has many of the properties of low frequency sound in that it can be directed in a straight beam and can be refracted or reflected similar to a light beam but with less scatter.

The recording of ultrasonic reflections or echoes has been used in many fields, including metallurgy to test metal homogeneity, and oceanography to chart ocean beds. The principles involved are relatively simple. An ultrasound beam is created by passing an alternating current through a piezoelectrical crystal of titanium or quartz. The crystal then vibrates at the same frequency as the alternating current, producing an ultrasound beam. Whenever a beam of ultrasound vibrations crosses a boundary or interface between two media of different acoustical impedance (density), some of the vibrational energy will be reflected back toward the source, while the remainder continues through the second medium. The returning ultrasound waves are detected by the same piezoelectric crystal that transmits the original waves. Thus, the transducer functions as both a transmitter and a receiver. The amount of sound reflected depends upon the magnitude of acoustical difference between the two media and the angle of incidence. That is, in order for echoes to return to the transmitter receiver crystal (transducer), the beam should ideally be aimed perpendicular to the interface (target).<sup>1,2</sup> Since the heart is composed

of several structural tissues, it is ideally suited for ultrasonic echocardiography.

### **Technique**

Echocardiographic examination of the heart is done with the patient supine or in a 30° right anterior oblique position. The transducer is applied to the chest with a water soluble gel at the third or fourth intercostal space along the left sternal border. The suprasternal notch<sup>3</sup> and apex<sup>4</sup> have been used for special studies. The transducer is then selectively directed. Initially, the transducer is pointed to-

---

**Echocardiography is a non-invasive technique that is useful in establishing the diagnosis of mitral stenosis, atrial tumors, idiopathic hypertrophic subaortic stenosis, and pericardial effusion. Because of the safety and convenience to the patient, the potential clinical applications seem great. Ultrasound should play an increasingly valuable role in clinical cardiology.**

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ward the apex of the heart, with the beam transversing the left ventricular cavity and through a small portion of the right ventricular cavity. The transducer is then tilted medially and superiorly, which redirects the ultrasound beam across the left ventricular cavity until it intersects the edges of the anterior mitral valve leaflet. The transducer is then directed more superiorly and medially, until the beam crosses the aortic root and body of the left atrium.

Since these recordings are standardized, the following measurements can be obtained: left ventricular internal dimension, left atrial internal dimension, and intraventricular septal thickness. Mitral, as well as tricuspid valve motion, can be analyzed.

Echocardiograms may be displayed and recorded by several techniques. In one technique, the distance along the horizontal axis of the oscilloscope screen represents depth and the vertical axis records

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Supported in part by a grant from the Kaw Valley Heart Association and a grant from the Timmons Foundation.

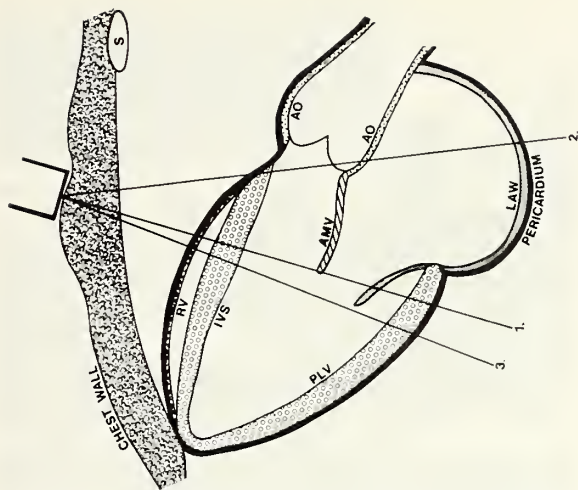


Figure 1. A diagrammatic cross section of the heart showing the structures through which the beam passes as it is directed from apex to base. RV=right ventricle, IVS=interventricular septum, PLV=posterior left ventricular wall, AMV=anterior mitral valve leaflet, AO=aorta, LAW=left atrial wall.

the strength of the echo at each depth. Most echocardiograms are displayed using a time-motion method (M mode). This allows observation of dynamic changes during the cardiac cycle. Using this method, a continuous echocardiogram encompassing several cardiac cycles produces an ultrasonic wave form representative of the moving cardiac structures.

## Clinical Application of Echocardiography

### Mitral Stenosis

Dr. Edler, in 1956, first recognized that the pattern of mitral valve motion was abnormal in patients who had mitral stenosis.<sup>5</sup> The normal recording of the anterior mitral valve leaflet has two peaks

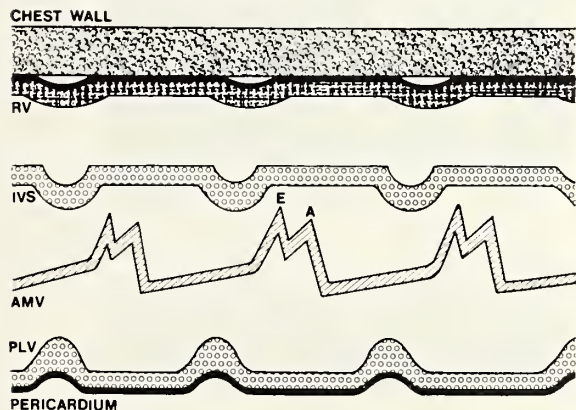


Figure 2. This diagrammatic echocardiogram is representative of what the time-motion scan would show when aimed at the anterior mitral valve leaflet (Position 2). Each cardiac interface is represented by its typical motion characteristics.

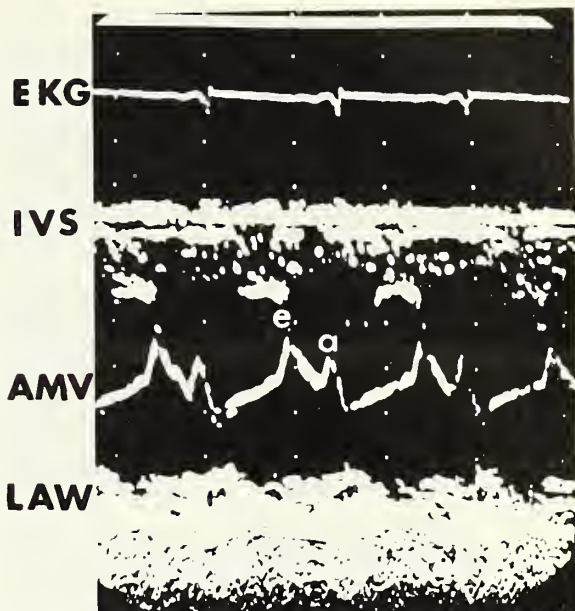


Figure 3. Echocardiogram of a normal mitral valve. Note the two peaks of anterior motion during systole labeled E and A.

of anterior motion during diastole. Normally, with the onset of ventricular diastole, the anterior mitral valve leaflet moves rapidly anterior to peak E. Following rapid passive ventricular filling, the anterior leaflet moves transiently in a posterior direction at about the same rate. Then, with the onset of active filling (atrial contraction), the valve leaflet again



Figure 4. Echocardiogram of a patient with moderately severe mitral stenosis and a thick calcified non-mobile valve. The diminished amplitude is a reflection of this and suggests that a valve prosthesis will probably be required.



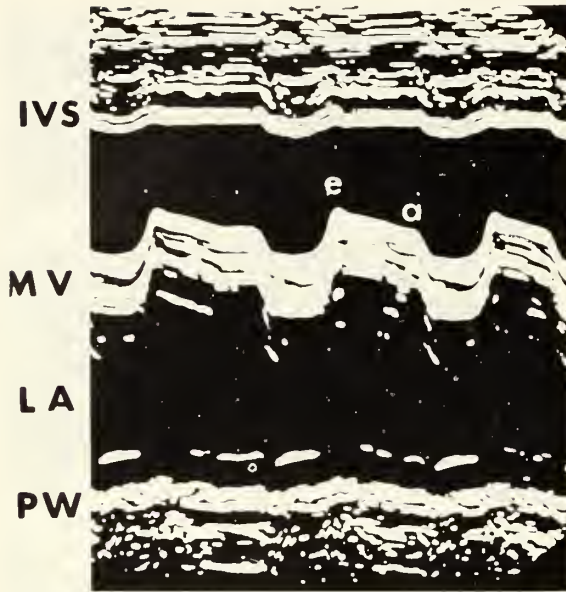


Figure 5. Echocardiogram of a patient with moderately severe mitral stenosis in whom the amplitude of valve motion (arrow) is much greater than in Figure 4. This suggests valvotomy will probably be possible.

moves sharply anterior to peak A. The valve starts to close shortly after atrial contraction and closes completely with ventricular systole.

Mitral stenosis produces a very characteristic change in the slope of posterior movement following peak E. The rapid descent following peak E is replaced by a plateau and markedly decreased rate of posterior movement. This indicates that a significant diastolic gradient exists. The amplitude of anterior movement is also affected. The rate of valve closure (the diastolic slope), and the amplitude of anterior motion of the mitral valve can be quantitatively assessed and used to judge the hemodynamic severity of the mitral stenosis.<sup>6</sup>

In addition to the quantitative assessment of the severity of mitral stenosis, echocardiography is of value in determining whether mitral commissuroto-

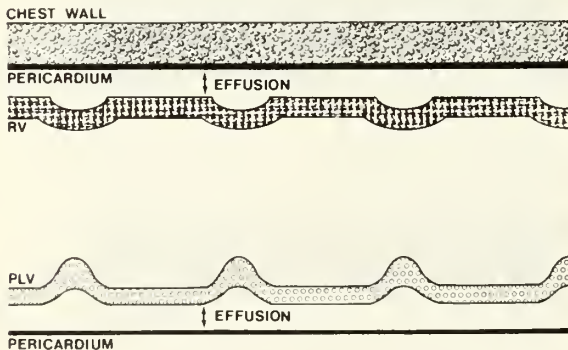


Figure 6. A diagrammatic illustration of the separation of the anterior and posterior pericardium from the heart wall as pericardial effusion accumulates.

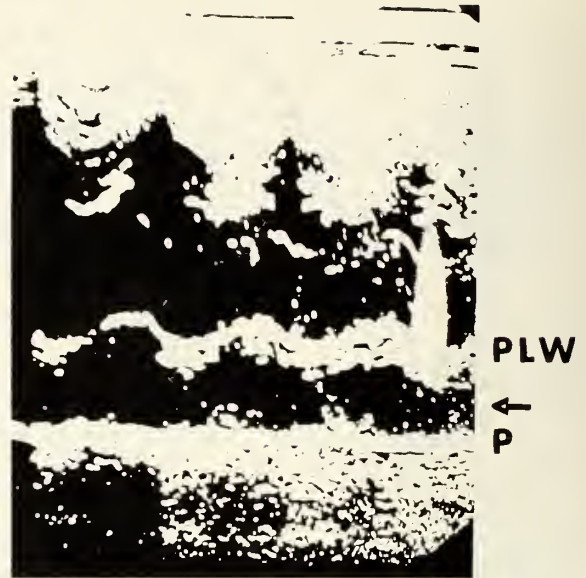


Figure 7. Echocardiogram in a patient with pericardial effusion showing the separation of the posterior left ventricular wall from the pericardium. The effusion is indicated by the echo-free space (arrow). 300 cc. of effusion was removed by pericardiocentesis.

my or valve replacement will be the most ideal operation.<sup>7</sup> The greatest value of this non-invasive technique is that it is a reliable and sensitive screening test for differentiating patients with mitral stenosis from those with confusing diastolic murmurs secondary to atrial septal defect or aortic insufficiency.

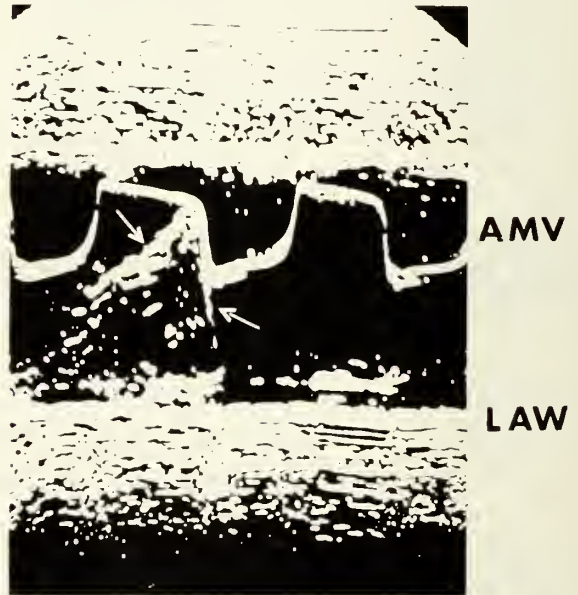


Figure 8. Echocardiogram in a patient with mitral stenosis and atrial fibrillation. A large mass of echoes (arrow) can be seen intermittently below the valve representing a large mobile atrial thrombus. This was confirmed angiographically and was surgically removed.





Figure 9. Echocardiogram in a patient with idiopathic hypertrophic subaortic stenosis. Note the abnormal systolic movement (arrow) of the mitral valve as compared to the normal mitral valve motion in systole.

### Pericardial Effusion

Echocardiography has established itself as a reliable and sensitive bedside technique in establishing the diagnosis of pericardial effusion.<sup>8,9,10</sup> As pericardial fluid accumulates, the posterior ventricular wall becomes separated from a stronger echo of the pericardium which no longer moves synchronously with the posterior wall. Subsequently, the anterior heart wall echo becomes separated from the anterior chest-pericardial wall echo by an echo-free space which can be readily recorded. Gross quantitation of the effusion can be estimated by the degree of separation of the anterior and posterior walls from the pericardium.<sup>8</sup>

Although practical applications of ultrasound to cardiology have been limited to the diagnosis of mitral stenosis and pericardial effusion, movements of the anterior mitral valve leaflet have proved to be of value in several other abnormalities, including idiopathic hypertrophic subaortic stenosis, atrial myxoma, and other forms of mitral valve disease.

### Atrial Tumors

The physical findings of atrial myxoma are often similar to mitral stenosis, mitral insufficiency, bacterial endocarditis, or a collagen disease. The tumor must be demonstrated angiographically to be certain of its presence. Since left atrial catheterization may be dangerous when a tumor is present, a non-invasive diagnostic technique is of great value.<sup>11</sup>

Echocardiography is an ideal technique for differentiating atrial thrombus or myxoma. The cloud of echoes seen intermittently under the mitral valve are from the thrombus. The echocardiographic technique for detecting a left atrial thrombus or tumor

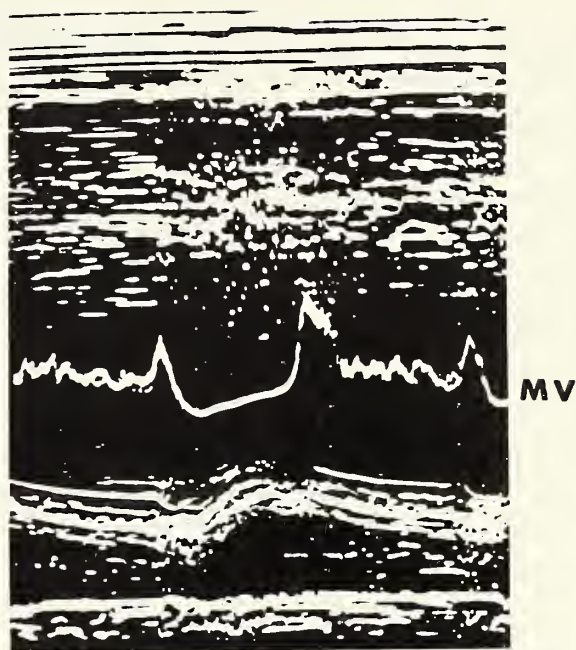


Figure 10. Echocardiogram showing the characteristic fluttering of the anterior mitral valve leaflet observed during diastole in many patients with aortic insufficiency and Austin Flint murmur.

depends on the tumor being in close proximity to the mitral valve.

### Idiopathic Hypertrophic Subaortic Stenosis

Idiopathic hypertrophic subaortic stenosis is an entity separate from other forms of congenital and acquired aortic stenosis. In its milder forms the obstruction may be evanescent so the diagnosis is difficult, unless invasive techniques such as cardiac catheterization are performed. There is an abnormal anterior motion of the anterior mitral valve leaflet during mid systole.<sup>12,13</sup> This abnormal valve movement can be demonstrated angiographically, and is responsible for the outflow tract obstruction.<sup>14,15</sup>

The anterior leaflet also exhibits a reduced diastolic slope similar to mitral stenosis.<sup>16</sup> This is explained by the poor left ventricular compliance of the markedly hypertrophied ventricle resulting in inflow obstruction at the ventricular level. Clinically, we have found echocardiography to be a highly reliable screening method of establishing the diagnosis of idiopathic hypertrophic subaortic stenosis. By obtaining an echocardiogram before and after a Valsalva maneuver or amyl nitrite inhalation, this diagnosis can be established even when there is no resting gradient. It is also helpful in assessing the post-operative relief of the obstruction.

### Mitral Valve Prolapse

The prolapsed or ballooned mitral valve is a newly recognized clinical entity. Although auscultation

and phonocardiography are useful in identifying the mid systolic click and late systolic murmur characteristic of this syndrome, a definitive diagnosis requires angiocardiography to demonstrate the lesion. In some cases, echocardiography permits a non-invasive means of recording mitral valve motion and provides an alternative non-invasive method of making a specific diagnosis. The echocardiogram demonstrates displacement of the posterior mitral valve leaflet toward the atrium during late systole.<sup>17, 18</sup>

### Aortic Insufficiency

The echocardiogram can be useful in differentiating an Austin Flint murmur from the murmur of mitral stenosis. When the aortic regurgitant jet strikes the anterior mitral valve leaflet, it causes a characteristic valve flutter. This can be recorded echocardiographically.

### Tricuspid Valve

The tricuspid valve motion may be difficult to record; however, with right ventricular enlargement it becomes easier to record. It may be seen in the same plane as the mitral valve, particularly in patients with mitral stenosis. The diagnostic criteria for tricuspid stenosis are the same as for mitral stenosis.<sup>19</sup>

### Other Applications

Because of the potential ability to dynamically follow changes in internal ventricular diameter during the cardiac cycle, many investigators have attempted to utilize this technique in predicting stroke volume and ejection fractions.<sup>20, 21, 22, 23</sup> With continued improvement of the equipment, this may become a reliable non-invasive bedside method of measuring left ventricular function.

### Acknowledgment

We wish to acknowledge the technical assistance of Doris Larson in the preparation of this paper.

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## KMS MEMBERSHIP DIRECTORY—1972

The 1972 Membership Directory will be printed in July. It would be helpful if you would check your listing in the 1971 directory. If the information is incorrect, or if you have recently become a member of the Kansas Medical Society and were not listed last year, please notify the Society office in Topeka.

Membership listings include: name, address, telephone number, year of birth, sex, medical school, year of license and specialty.

Corrections or additions should be sent to the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.



# Voluntary Hyperventilation as a Cause of Needless Drowning

W. D. SNIVELY, JR., M.D.\* and

JAN THUERBACH, *Evansville, Indiana*

MANY PRACTICES long thought to be harmless, such as waxing obese on a diet high in saturated fats, have proven to be dangerous, even deadly. So it is with the practice of breathing deeply before swimming underwater. It now appears all too clear that such hyperventilation can induce a shallow water blackout brought on in simple terms from loss of consciousness induced by oxygen starvation of the brain that occurs before the swimmer receives an irrepressible physiologic signal to breathe. Several thousand persons die each year from drowning; it appears entirely possible that a goodly number of these drownings are caused by voluntary hyperventilation. And the very individuals that die in this manner are young, healthy, usually competent swimmers. How many times we have read or heard, "He was an excellent swimmer . . . we just don't understand why he drowned!" Voluntary hyperventilation may well provide the answer.

Typically, drowning following hyperventilation occurs in this manner. A young man is trying to see how far he can swim underwater, perhaps competing in a sense with himself, perhaps trying to better another person's record. He has learned from his agemates or perhaps from a swimming instructor that if he breathes rapidly and deeply for a minute, two minutes or more, he can stay underwater for a relatively long period. And so he hyperventilates, then plunges into the water. Indeed, most individuals that do this no doubt accomplish what they set out to do. They swim for a relatively long distance underwater and emerge happy with their accomplishment. But others simply don't come up. If friends have been watching, they may recognize that the individual is in trouble, dive down and bring him up. But all too frequently the most energetic efforts at resuscitation are futile.

## Physiologic Mechanisms

Before examining a series of case histories, let us inquire into the mechanism of drowning caused by underwater swimming following hyperventilation. Normally, arterial blood contains oxygen at a pressure of from 90 to 100 mm of mercury. Venous

blood may have an oxygen tension of 40 mm of mercury. If, however, the arterial oxygen pressure ( $pO_2$ ) drops below 60 mm of mercury, it is inadequate to provide the brain with sufficient oxygen to maintain consciousness. The exact figure at which the individual loses consciousness can vary with age, conditioning, carbon dioxide tension, and perhaps special susceptibilities. The body contains special sen-

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**Overbreathing before preparing to swim underwater is an obvious cause of needless death in healthy, vigorous, usually competent swimmers. Individuals should be informed of the hazards of this practice and of the basic physiologic concepts involved.**

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sors that detect dangerously low oxygen concentration and signal the need to breathe. But the signal is a weak one; it can easily be suppressed, especially by a swimmer who is concentrating on endurance and the achievement of a challenging goal.

Far more important than oxygen in signalling the need to breathe is the level of carbon dioxide. Its normal tension ranges between 40 to 50 mm of mercury. When it rises above this level, it stimulates sensors in the brain and carotid vessels sparking an irrepressible desire to breathe. Now what hyperventilation does is to lower the carbon dioxide tension in the body without importantly changing the oxygen stores. It also causes a reduction in the amount of circulating carbon dioxide (which with water provides carbonic acid, the important acid component of our body fluid). The result is a condition of respiratory alkalosis brought about by carbon dioxide-deficit. Respiratory alkalosis interferes with nerve conduction and causes symptoms of hyperventilation, numbness and tingling especially about the mouth and of the hands and feet. In addition, the low pressure of carbon dioxide causes constriction of the blood vessels that supply the brain.

So our swimmer, having enthusiastically hyperventilated, submerges with a reduced carbon dioxide tension depending upon how long and how vigorously he has hyperventilated, and with constrict-

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ed cerebral blood vessels. As he vigorously swims underwater, the tiny quantities of oxygen stored in the blood become exhausted. And they become exhausted before the carbon dioxide tension can rise enough to stimulate an irrepressible urge to breathe. Deprived of oxygen, the swimmer becomes unconscious, hence cannot respond to the rise in carbon dioxide that will occur with time. Instead, usually while continuing his swimming movements, he starts breathing and unless he is promptly rescued and resuscitated, he will aspirate water and will drown.

### Some Live to Tell About It

Reports of individuals who suffered loss of consciousness while swimming underwater and did not drown are instructive. These are reported by Craig in *JAMA*, April 29, 1961. An excellent swimmer, age 27, hyperventilated for two minutes before swimming underwater. Endeavoring to swim 200 feet, he remembered passing a pool ladder 40 feet from the end. When he reached the end of the pool he surfaced and regained consciousness, but remembered nothing after passing the ladder.

Another good swimmer, 18 years old, hyperventilated for one minute before swimming underwater. He swam two laps then felt a need for breath. But reminding himself of the goal he had established, he managed to suppress the urge to breathe. He forgot everything for the third lap. When he surfaced, he coughed and gasped but did not lift his head above the surface. A nearby swimmer, who had been watching the swim, immediately raised the boy's head above the water and he regained consciousness in two or three breaths.

Another boy hyperventilated for two minutes. Underwater he felt he could swim forever, but when partly through his swim he blacked out. When he came to, he was on the surface of the water. Dizzy and exhausted he swam for shore. He managed to stagger out but had a headache for the next hour, could remember no decision to surface.

A 14-year-old hyperventilated for "quite a long time" until he felt dizziness and tingling of the hands and feet. Then he dived into the water and swam several feet beneath the surface for three laps of the 60-foot pool. He blacked out as he touched the wall, but took several strokes of the fourth lap before he began to sink. An observer pulled him to the edge of the pool where he regained consciousness but recalled only the first three laps.

An 18-year-old boy hyperventilated in an effort to swim 120 feet. He noticed the urge to breathe during the middle of the second 60 feet but managed to go on. "Things turned tan." He next remembered lying on the edge of the pool with someone pushing on his back.

A 17-year-old took ten or twelve "very deep

breaths," swam 75 feet and was starting a second lap when about halfway back his mind "went blank." Spectators said he continued to swim and appeared to surface after about 160 feet. He then began to sink and was pulled out immediately. Artificial respiration for two or three minutes was necessary to revive him.

Students were asked to swim one length of a 75-foot pool at the conclusion of a lifesaving class. One man had a "wonderful feeling that I could go, go, go." And while the rest of the class emerged after one lap, he made a turn and started to swim another lap. The instructor reached over the edge of the pool with his foot and pushed the swimmer on the back, at which he climbed out but did not seem to know where he was. He later said that he did not recall starting the second lap or climbing out of the pool. He had hyperventilated before beginning his swim.

A medical student, working as a lifeguard at a large outdoor pool, hyperventilated before swimming underwater. He was found on the bottom after he had gone about 120 feet. Taken from the water, he was flaccid and cyanotic. Five to seven minutes of artificial respiration was required to bring him around.

Other cases are reported by Strauss in *Emergency Medicine*, July 1971. A 16-year-old trying to set a new record for himself for underwater swimming hyperventilated for five minutes. His mouth and fingertips became numb. He passed the 50-yard mark with no recollection of air hunger. He noticed a spreading numbness of his arms and legs. At the 60-yard mark he touched the wall and sank. Brought to the surface he coughed violently, vomited, then regained consciousness.

A 27-year-old, inactive man, tried to hold his breath for a new record while floating face down. He hyperventilated vigorously for ten minutes until he was totally numb from head to foot. After three minutes he appeared to go limp. Carried from the water he was rigid and cyanotic. He was not breathing. When his mouth was forced open and the airway cleared, he began to breathe and regained consciousness.

### Case Reports of Drownings

The preceding were the fortunate individuals. Case reports describe others who died. While evidence concerning deaths from swimming underwater following hyperventilation must perhaps be regarded as circumstantial, since post mortem examinations cannot reveal with certainty the true cause of death, the conclusion is reasonably justified that the deaths occurred from blackout underwater caused by hyperventilation plus vigorous swimming.

These reports are from Craig, *JAMA*, April 29,

1961: A young college swimmer desired to swim 150 feet underwater. He swam for some time before he attempted the underwater swim. Suddenly the lifeguard saw the individual on the bottom at the deep end of the pool. He could not have been there more than a minute. Brought from the pool the young man was immediately given artificial respiration, followed by mouth-to-mouth breathing, but the instructor was unable to move any air. A machine resuscitator was no more successful. Autopsy revealed the lungs to be full of water.

A 21-year-old swimming instructor hyperventilated then swam 120 feet underwater when one of the students noticed he was in trouble. Pulled out immediately, members of a fire department used a resuscitator on him. Two physicians were summoned from nearby but their efforts were unavailing. The individual died. No autopsy was performed.

Quite interestingly, many writers who have not cited specific cases allude to persons who have died from hyperventilation before swimming underwater. Gray, in the *Medical Journal of Australia*, October 16, 1966 emphasizes that the "still very common practice of hyperventilation to increase underwater endurance is dangerous and has caused many deaths.

Webster, in *Public Health Reports*, July 1967 points out that "swimming underwater for endurance, with the accompanying danger of hyperventilation, accounted for six deaths; revival of these victims was not possible even though the accidents in most instances were witnessed and the victims were quickly brought out of the water for application of first aid."

A recent newspaper report, which stimulated the writing of this article, described the case of an outstanding swimmer who drowned in a closely supervised pool, among friends, while swimming underwater. Having just finished a number of sprint laps, he took several deep breaths and started swimming underwater. His body was seen just after that, motionless in the shallow end of the pool. Autopsy findings showed no possible alternative cause of death other than blackout following hyperventilation.

## Comment

The tiny number of documented case histories of death following underwater swimming after voluntary hyperventilation is dangerously deceiving. It should probably be multiplied by thousands, perhaps tens of thousands, to approach an accurate figure and thus duly reflect the inherent hazards.

Almost all of the recorded victims of drowning or near drowning were reputedly good swimmers, experienced in underwater swimming. The "hyperventilation-before-swimming-underwater" syndrome, therefore, may well explain many if not most of the deaths by drowning of experienced swimmers.

## A Common Practice

Both authors, when unaware of the hazards, engaged in hyperventilation before swimming underwater and, incidentally, have been duly impressed with the distances they swam. The procedure seemed so innocuous that the possibility of danger never even occurred. It is not surprising, then, that such hyperventilating is a common practice among persons attempting endurance swimming underwater.

The senior author has repeatedly quizzed nursing students, the question being: "How many of you have breathed deeply and rapidly in order to swim farther underwater?" About 40 per cent of the students in southern Indiana responded affirmatively, about 60 per cent in Michigan, which abounds in lakes and hence in swimming opportunities.

## The Goad of Competition

Another factor is strongly involved in deaths from swimming underwater after hyperventilating, and that is the competitive urge. Persons who are driven toward a goal, whether they are competing with themselves or others, will fight desperately to overcome the urge to breathe when the signal first intrudes on their consciousness. Craig adds that "pre-occupation with a goal may also affect how the subject will sense and interpret his physiologic warning bell telling him to come up for air." This signal, of course, is the rising level of carbon dioxide in the blood. And if the swimmer is successful in suppressing the urge to breathe, oxygen deprivation of the brain takes over, and the individual blacks out.

Some persons appear to be particularly sensitive to hyperventilation and perhaps more prone to shallow water blackout. Another factor that frequently enters in is overexertion. Strenuous exercise appears to increase one's tolerance of lowered carbon dioxide tension. This, of course, enhances the probability of cerebral hypoxia; the most dreadful aspect of hypoxia is that consciousness is lost with little warning. When one faints he has several seconds warning. But hypoxic subjects, swimming underwater, may continue their swimming activity in the period between loss of consciousness and final collapse. Indeed, after blackout occurs, many swimmers continue to make coordinated movements, one even executed a turn on to the next lap beyond the point that he recalled. Therefore, even if the victims are fortunate enough to have spectators, the latter will probably not suspect that a problem exists until final collapse occurs.

## Effects of Hyperventilation

The physiologic effects experienced by swimmers in shallow water blackout closely resemble the reactions noted when a person breathes deeply and



rapidly out of water. Some question whether one can render himself unconscious in this manner. But such unconsciousness has been reported and, in fact, a medical student died because of hyperventilation carried out in a physiological experiment.

Persons lowly placed on the rungs of society have a way of discovering such basic truths. Several centuries ago, seamen performing under the savage punishment codes of the English Navy, sentenced to flogging until unconsciousness should supervene, discovered that by breathing deeply and rapidly before the flogging they would become unconscious sooner. Similarly, convicts desiring to end an intolerable existence have reportedly hyperventilated then submerged their heads in the toilet bowls in their cells, taking the precaution of propping their bodies, and thereby committing suicide in a relatively unpainful manner.

Specifically, the symptoms of hyperventilation include tremors, lightheadedness, double vision, vertigo, epileptic-like seizures, coldness of the arms and legs, irritability, decreased ability to concentrate, diuresis, hunger, and EEG changes. Likewise, the systemic effects of hyperventilation are significant: low blood pressure, constriction of the blood vessels of the brain, decreased brain blood flow, vasoconstriction of the peripheral vessels, and certain EKG abnormalities that are consistent with hypoxia.

## Treatment

Unfortunately, little can be said for immediate treatment of persons apparently drowned after swimming underwater following hyperventilation. Indeed, they seem to be singularly resistant to resuscitation, probably because the immediate stimulus for their drowning was hypoxia. As Wong and Grace point out in *JAMA*, November 16, 1963 survivors of near drowning should be hospitalized and given prolonged intermittent positive pressure breathing with 100 per cent oxygen. Immediate efforts should be made to correct the serious blood volume and electrolyte derangements that occur. Still, prevention is ever so much better than treatment, and prevention consists quite simply of advising coaches, teachers, students, and swimmers of the deadly hazard of hyperventilation before swimming underwater.

Conversations with experienced swimmers, coaches and experts in the field of athletics reveal that many instructors still advocate deep breathing techniques. Obviously, those versed in the details of physiology caution against this hazardous practice even though, admittedly, the hazard is a matter of degree. Craig, in *JAMA*, April 29, 1961 points out that taking a few deep breaths before diving in and swimming underwater is not likely to cause difficulty. In a series of studies, approximately 3,000 children swam under-

water after taking just a few deep breaths before any incidence of loss of consciousness occurred. So, underwater swimming is probably quite safe in the absence of prolonged hyperventilation. It is extreme hyperventilation that counteracts the built-in warnings that urge the swimmer to come to the surface, permitting him to proceed to his doom without any real desire to breathe.

Considering, however, the varying susceptibilities of different individuals to the effects of excessive breathing practices, and in view of the diverse interpretations of "just a few deep breaths," perhaps the practice of hyperventilating before swimming underwater should be discarded entirely.

It must also be borne in mind that hyperventilation can result from vigorous exercise and, therefore, the individual should be cautioned against swimming underwater if he has recently swum vigorously on the surface of the water.

## Divers Have Breathing Technique

Korean women who dive for a livelihood, known as ama, indulge in light hyperventilation prior to diving. "Before each dive, they hyperventilate, pursing their lips and in many loud whistles that can be heard for long distances." Upon emergence they repeat this maneuver which they claim "protects their lungs." Perhaps the ama have learned over the centuries that hyperventilation helps but that it must be exceedingly mild if they are to stay out of danger. Perhaps through age old custom they have perfected a technique of getting ready for diving that limits the blowing off of carbon dioxide to a safe level. But until one learns the secret of the ama, the practice of hyperventilation should be avoided.

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# Level One Life Support Units

## *Normal Requirements Recommended for Kansas Hospitals*

W. A. STANLEY,\* *Topeka, Kansas*

THE REPORT of the Inter-Society Commission for Heart Disease Resources, published in *Circulation*, Volume 43, April 1971 entitled, "Resources for the Optimal Care of Patients with Acute Myocardial Infarction," and the Emergency Services Section of the Accreditation Manual for Hospitals which went into effect on July 1, 1971 established some rigid guidelines for the provision of improved emergency care facilities at hospitals without coronary care units, factories, office buildings, airports, stadiums, and other places where great numbers of people congregate and have the numerical possibility of suffering heart attacks.

The Kansas Regional Medical Program sponsors the Kansas Continuing Education Council, whose membership includes representatives of many Kansas organizations with an interest in or responsibility for continuing education in health (*Table I*). On June 28, 1971 this council met and decided that the requirements of the publications cited made necessary the naming of task forces to look at the recommendations, set some norms or standards of equipment, personnel and training, and that a "Task Force I" meet and determine such norms or standards. This task force was composed of representatives of the Coronary Care Committee of the Kansas Heart Association as the primary source, with other members from the Kansas State Nurses Association, Kansas League for Nursing, Kansas Hospital Association, Kansas State Comprehensive Health Planning, Kansas Medical Society, Kansas State Department of Health, KRMP Office of Nursing, KRMP Office of Research and Evaluation, and Richard Brose, of KUMC. The program director of the Kansas Heart Association was directed to assemble the Task Force I as soon thereafter as possible to establish the norms for implementation of the plan.

On July 17, 1971 members of the Task Force I met and agreed that the Heart Association would take the political responsibility for and implementation of whatever transpired. It was decided that certain basic equipment, personnel, and training were necessary in each level one support unit, if the rec-

ommendations of the Inter-Society Commission Report and the Emergency Services Section of the Accreditation Manual for Hospitals were to be implemented throughout the state.

It was established that no specific manufacturer's equipment would be recommended, but that equipment purchased by hospitals should be compatible with other equipment in use.

For the level one support unit, as defined in the publications cited, the task force recommended that basic equipment include a constant monitor oscilloscope; a matching or compatible defibrillator; oxygen and suction apparatus (airways and bag units); a cardiac drug tray to stabilize cardiac rhythm, consisting of atropine, Lidocaine, sodium bicarbonate, narcotics (morphine and Demerol), Isuprel, and Epinephrine. Calcium chloride would be available in such units, and the local situation could determine preferences and substitutions as local physicians make such decisions. Blood pressure cuffs, stethoscopes, intravenous fluids, 5 per cent D/W, AMBU-type bag mask units, and IV equipment and supplies are to be part of needed equipment. It was unanimously recommended that drugs be infused and that fluids be infused by intracatheterization.

In considering personnel who would be the normal amount needed in such level one life support units in hospital emergency facilities, the task force agreed that a registered nurse and at least one other trained person (RN, LPN or aide) were necessary, and that at level one life support units outside of the hospital a physician would be a luxury, as would be an anesthesiologist or an anesthetist. A particular point was made that volunteer lay persons, such as Explorer Scouts, Red Cross trained first aiders, and others who had been further trained in the recognition of early warning signs and symptoms of heart attack, and who had been given supervised cardiopulmonary resuscitation training and practice, could be utilized in stadiums, arenas, and other public places where large groups of people congregate.

It was further agreed that all actions accomplished in any level one life support unit, in the hospital or outside it, be done under the written or oral standing orders prepared by a physician and approved by the local hospital medical staff, and that

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\* Program Director, Kansas Heart Association.

TABLE I  
REPRESENTATIVE MEMBERSHIP  
KANSAS CONTINUING EDUCATION  
COUNCIL

American Cancer Society, Kansas Division
American Physical Therapy Association, Kansas Chapter
Comprehensive Health Planning, State Department of Health
Kansas Heart Association
Kansas Hospital Association, and Kansas Hospital Association Educational Foundation
Kansas League for Nursing
Kansas Medical Society
Kansas Nursing Home Association, Inc.
Kansas Optometric Association
Kansas Regional Medical Program, Regional Advisory Group Representative
Kansas State Department of Health, Division of Health Education
Kansas State Department of Social Welfare, Division of Institutional Management
Kansas State Nurses Association
Kansas Tuberculosis and Health Association
University of Kansas School of Medicine
Department of Postgraduate Medical Education
Department of Nursing Education
Wichita State University, College of Health Related Professions

Halstead Hospital, Halstead, Kansas reminded the members of the task force of the availability of a battery-powered monitor-defibrillator which was on the market for ambulance or level one life support unit use.

Following the meeting, arrangements were made to train ushers at Kansas State University stadium, after arrangements with the Athletic Department for such stadium protection for spectators had been made by William R. Durkee, M.D. At Kansas University in Lawrence, the Kansas University Medical School arranged for coverage by the special vehicle to train ambulance personnel around the state in immediate care of the sick and injured, under the Highway Safety Act. Other state colleges were extended the opportunity of training their ushers in the cardiopulmonary resuscitation techniques and several of them, such as Wichita State and Hays State, made such arrangements.

The Kansas Regional Medical Program Research and Evaluation Section accepted the task of making an emergency care equipment survey of the hospitals in Kansas. Using this survey to inform administrators and medical staffs of each hospital of their emergency care abilities, when compared to the other hospitals in their area, it is hoped that many of the hospitals which were below standard would upgrade their facilities to fulfill the requirements and recommendations of the Inter-Society Commission Report. The questionnaire is now in process of refinement and approval. When completed, it will be sent to each hospital under the cooperative support of the Kansas Regional Medical Program, the Kansas Hospital Association, and the Kansas Heart Association.

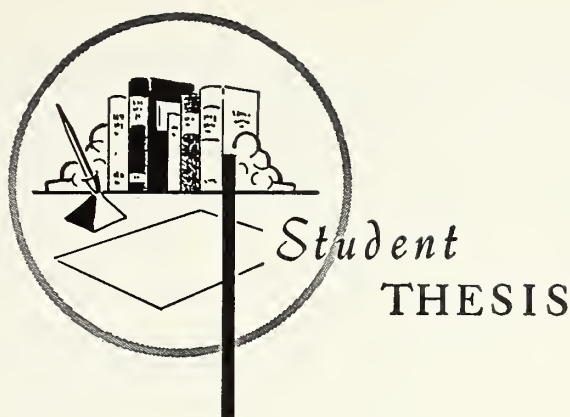
Task Force I plans to meet again upon the availability of the refined information from the questionnaire and make further recommendations and offer expertise to any hospital, college, factory, convention site, airport, or other place where masses of people congregate for the level one life support unit establishment and personnel training and development.

As the Inter-Society Commission Report points out, the frequent dilemma now is the person who develops a myocardial infarction; he is too often neglected too long. The first step toward help taken by himself or others present may well be the most important in saving his life. Right now, in most places, the important first step is in large measure determined by fate. Where the patient is and what kind of help is available immediately, become a life or death matter. It is the hope of all concerned with Task Force I that the facilities in Kansas will not be found wanting when such events occur to people within its boundaries.

such orders be followed until the arrival of any physician.

Regarding the training of personnel to be utilized in level one life support units, the task force agreed unanimously that every person assigned to duties in such a unit should be thoroughly trained to: (1) recognize signs and symptoms of impending myocardial infarctions; (2) know cardiopulmonary resuscitation and how to perform it properly; (3) know how to use all equipment in the life support units of such hospitals and clinics; (4) that all physicians and nurses should have a thorough knowledge of the use of the recommended drugs in a level one support unit. Model standing orders should be formulated, approved by the medical staff and hospital board, and personnel should be thoroughly familiar with them; (5) all MDs, RNs, and dentists should be familiar with EKG and know how to interpret the tracing. The dentist may be utilized as a resource person particularly in a small town, since the law enables him to order the use of drugs. Usually, the local physician or nurse would be the consultant.

The chairman of the Task Force I, Donald D. Decker, M.D., cardiologist at the Hertzler Clinic and



## *Birth Control Usage Among Abortion Patients*

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WITH THE PASSAGE of new abortion legislation in the state of Kansas, a large number of women have entered KUMC for therapeutic abortions. In a study of 1,642 such patients seen at KUMC from July 1, 1970 to December 31, 1970, Robinson<sup>14</sup> showed that these patients were similar to those seen in other areas of the United States,<sup>2, 6, 16, 21, 22</sup> in terms of marital status. But while the racial distribution of these patients was similar to that of the United States population base, the age distribution and marital status were not. There was a preponderance of young single females.

Since the majority of the patients seen in these studies are not currently married, it is not unreasonable to consider their pregnancies unwanted. To the extent that this is so, these unwanted pregnancies may be conceptualized as failures in contraception. It was felt that it would be appropriate to examine the nature of this contraceptive failure in patients seen at KUMC. It is hoped that a better understanding of this "failure" may enable professionals working in the area of human sexuality to help other women to more successfully handle their lives. Therefore, several hypotheses were made and tested.

Robinson speculated that once a woman was exposed to contraception in marriage, her use of contraception remained relatively constant, even if her marital status changed. Therefore, it was hypothesized that married, divorced, separated, and wid-

owed women seeking abortions would not differ in contraceptive use at the time of conception.

The reluctance of many, especially females, to use contraceptives consciously and premeditatedly in their premarital sexual relationships has been noted.<sup>8</sup> For this reason, it was hypothesized that single abortion patients would show a contraceptive history less effective than abortion patients of other marital status.

Robinson suggested that Negroes may be more realistic about their sexual behavior, and that single Negro females may be more apt to use contraceptive measures than would Caucasian single females, whose culture holds more ambivalent attitudes about premarital sexual intercourse. It was hypothesized that this would be reflected in a greater contraceptive usage at the time of conception by single Negro than single Caucasian abortion patients.

The adolescent in our culture is confronted by masses of conflicting sexual information with strong emotional loadings. This ambivalence toward sexual matters in our society results in a great deal of confusion in the adolescent in terms of understanding his or her own sexuality.<sup>19</sup> With maturation and the solidification of internal values it implies, one would expect there to be a greater degree of realistic thinking on the part of the single woman regarding her sexual behavior. Specifically, one would expect an increased use of contraceptives among sexually active females as age increases. It is hypothesized that this would be shown by a greater proportion of abortion patients to be contraceptive failures, rather than noncontraceptive users as age increases. Only single Caucasian females were tested, because of the relatively small number of single Negro patients.

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school.

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Because the percentage of single females that are sexually active varies with age,<sup>7,17</sup> the hypothesis was made that the number of abortions obtained at different ages by single females would not be proportionate to the number of single females at different ages in the United States population.

Conversely, it was hypothesized that the number of abortions obtained at different ages by single females would be proportionate to the population at risk (*i.e.*, the number of single, sexually active females at different ages).

Method

The 1,642 patients therapeutically aborted at KUMC from March 23, 1970 to October 1, 1971 were interviewed at bedside on the day of surgery by various members of the Obstetrics and Gynecology Department, in an effort to offer expert advice about contraception to the patients who had experienced an unwanted pregnancy. During this interview the following data was collected: name, age, race, marital status, contraception form, if any, used at the time of conception (*Table I*), and plans for

future contraceptive use. Ages varied from 13-40 years.

Data from Robinson's study was subjected to the following analyses. The 337 patients in the study who were married, divorced, separated, and widowed were compared in terms of contraceptive use at the time of conception by a 2×4 Chi<sup>2</sup> analysis.

The data concerning contraceptive use at the time of conception from 1,642 single Caucasian patients and 167 single Negro patients aborted at KUMC was tested by a 2×2 Chi<sup>2</sup> analysis.

The change with age in contraceptive usage by 1,475 single Caucasian abortion patients at the time of conception was tested by a point biserial correlation, and an F test of significance was applied.

The number of abortions sought at various ages from 13-40 was compared to a United States baseline<sup>20</sup> (*Table VI*). KUMC data was collapsed (*Table VII*) to be comparable to census data, and a "goodness of fit" Chi<sup>2</sup> test was utilized.

Kinsey<sup>7</sup> and Schofield<sup>17</sup> reported the incidence of sexual activity among single females, and their findings are not dissimilar (*Table IX*). An estimate of the population at risk, the numbers of sexually active single females in the United States population at different ages was formed by multiplying the number of single females at various ages by the average incidence of sexual activity for the age range in the Kinsey data. This estimate was compared to the collapsed data as described above by a "goodness of fit" Chi<sup>2</sup> test.

Results

The hypothesis that there was no difference between married, divorced, separated, and widowed patients was confirmed with a Chi<sup>2</sup> of 3.33 and 2 df ( $p>.30$ ) (*Table II*).

The hypothesis that the use of contraceptives by single patients at the time of conception was less frequent than the use of contraceptives by patients

TABLE I  
CONTRACEPTIVE USE AT THE TIME OF  
CONCEPTION FOR 1,642 SINGLE  
ABORTION PATIENTS

Age	White		Negro		Total	
	YES	NO	YES	NO	YES	NO
12 .....				1		1
13 .....		8		5		13
14 .....	1	43		11	1	54
15 .....	2	96	1	20	3	116
16 .....	9	135	4	9	13	144
17 .....	19	190	6	14	25	204
18 .....	25	117	2	8	27	155
19 .....	26	136	7	13	33	149
20 .....	22	82	8	5	30	87
21 .....	47	142	4	13	51	155
22 .....	33	66	7	6	40	72
23 .....	38	53	3	4	41	57
24 .....	17	26	2	4	19	30
25 .....	15	16	2	1	17	17
26 .....	7	14	2		9	14
27 .....	7	13	1	1	8	14
28 .....	5	8	1		6	8
29 .....	2	6			2	6
30 .....		6	1		1	6
31 .....		3				3
32 .....		1				1
33 .....	2	2			2	2
34 .....	1	1			1	1
38 .....		2				2
40 .....		1	1		1	1
Total .....	278	1,197	52	115	330	1,312
Total ....						1,642

TABLE II  
CHI<sup>2</sup> ANALYSIS OF CONTRACEPTIVE USE  
AT THE TIME OF CONCEPTION BY  
MARRIED, DIVORCED, SEPARATED, AND  
WIDOWED PATIENTS. FROM  
ROBINSON 1971

	Yes	No	Total
Married .....	155	33	188
Divorced .....	95	11	106
Separated .....	27	10	37
Widowed .....	5	1	6
Total .....	282	55	337
Chi <sup>2</sup> = 3.33	3 df	p>.30	

TABLE III

CHI<sup>2</sup> ANALYSIS OF CONTRACEPTIVE USE  
AT THE TIME OF CONCEPTION BY  
EVER MARRIED AND SINGLE ABORTION  
PATIENTS, FROM ROBINSON 1971

	Yes	No	Total
Single .....	147	430	577
Ever married .....	282	55	337
Total .....	429	485	914
Chi <sup>2</sup> = 289.28	1 df	p < .001	

who at some time in their lives had been married, was substantiated. There was a significant difference between these groups, Chi<sup>2</sup> = 289.29 with 1 df (p < .001) (Table III).

The hypothesis that there was a difference in contraceptive use at the time of conception between single Negroes and single Caucasians, and that the Negroes were more effective in their usage, was confirmed Chi<sup>2</sup> = 10.68 with 1 df (p < .001) (Table IV).

The hypothesis that as age increases in Caucasian abortion patients the proportion of patients using contraceptive devices would increase, is borne out by a point biserial correlation, which is positive and significant:  $r = .481$ ,  $F = 444.0$ , 1 and 1473 df (p < .001) (Table V). The correlation is undoubtedly low because of the relatively small change with age, but is still significant due to the large N in the analysis.

The hypothesis that the number of abortions obtained by single women at different ages would not be proportionate to the number of single females at different ages in the United States population, was confirmed: Chi<sup>2</sup> = 389.55 with 5 df (p < .001) (Table VIII).

The hypothesis that the number of abortions obtained by single women at different ages would be proportionate to the population at risk, as defined

TABLE IV

CHI<sup>2</sup> ANALYSIS OF CONTRACEPTIVE USE  
AT THE TIME OF CONCEPTION BY  
SINGLE CAUCASIAN AND NEGRO  
ABORTION PATIENTS

	Yes	No	Total
White .....	278	1,197	1,475
Negro .....	52	115	167
Total .....	330	1,312	1,642
Chi <sup>2</sup> = 10.68	1 df	p < .001	

TABLE V

POINT BISERIAL CORRELATION OF AGE  
OF SINGLE CAUCASIAN ABORTION  
PATIENTS AND CONTRACEPTIVE USE AT  
THE TIME OF CONCEPTION

Age (Y)	N <sub>y</sub>	N <sub>n</sub>	Y•N <sub>y</sub>	Y•N <sub>n</sub>	Y <sup>2</sup> •N <sub>y+n</sub>
13 .....		8		104	1,352
14 .....	1	43	14	602	8,624
15 .....	2	96	30	1,440	22,050
16 .....	9	135	144	2,160	36,864
17 .....	19	190	323	3,230	60,401
18 .....	25	147	450	2,646	55,728
19 .....	26	136	494	2,584	58,482
20 .....	22	82	440	1,640	41,600
21 .....	47	142	987	2,982	83,349
22 .....	33	66	726	1,452	47,916
23 .....	38	53	874	1,219	48,139
24 .....	17	26	408	624	24,768
25 .....	15	16	375	400	19,375
26 .....	7	14	182	364	14,196
27 .....	7	13	189	351	14,580
28 .....	5	8	140	224	10,192
29 .....	2	6	58	174	6,728
30 .....		6		180	5,400
31 .....		3		93	2,883
32 .....		1		32	1,024
33 .....	2	2	66	66	4,356
34 .....	1	1	34	34	2,312
38 .....		2		76	2,888
40 .....		1		40	1,600
Total .....	278	1,197	5,934	22,717	574,807
	N 1475		ΣX 28551		
	Σy <sub>t</sub> <sup>2</sup> = 22,157		Σy <sub>b</sub> <sup>2</sup> = 5,142		r = .481
			Σy <sub>w</sub> <sup>2</sup> = 17,015		
	F = 444		1/1473 df		p < .001

above, was not confirmed: Chi<sup>2</sup> = 870.65 with 5 df (p < .001) (Table X).

In summary, the results of the analysis of the contraceptive usage of KUMC abortion patients, and the number of patients seeking abortions at various ages, are as follows.

1. Married, divorced, separated, and widowed women do not differ in their contraceptive usage.

2. Single women used contraception less often than patients who have been married.

3. Single Negro women are more likely to be contraceptive users than single Caucasian women.

4. As single Caucasian women become older, they are more likely to use contraceptive devices.

5. More single woman age 20-24 seek abortions than would be expected by their representation in population. However, fewer single women age 14-17 seek abortions than would be expected by their representation in the population.

6. More single women age 14-17 seek abortions than would be expected from the estimates

TABLE VI  
NUMBER OF SINGLE FEMALES IN THE  
UNITED STATES BY AGE GROUPS

Age Range	Number × 1,000	Proportion of Total
14-17 .....	7,334	.5041
18-19 .....	2,695	.1852
20-24 .....	2,895	.1959
25-29 .....	725	.0498
30-34 .....	345	.0237
35-44 .....	599	.0411
Total .....	14,548	.9998

of sexual activity in single women at different ages, and fewer single women age 25-44 seek abortions than would be expected.

Discussion

The finding that the contraceptive histories of abortion patients who have been married are similar—although they may presently be separated, widowed, divorced, or married—is not surprising. This is consistent with Robinson's observation that once a woman obtains contraceptive advice under the societal sanction of marriage, this education is not lost should her marital status change. Within marriage, when our culture expects her to be sexually active and, indeed, fosters active expression of her libido, the woman may come to recognize and accept her normal sexuality. After the acceptance of this aspect of herself, the woman may be less willing, or unwilling, to again become a non-sexual entity, should her marital status change. Secondly, these women are no longer burdened by society's image of the pure virginal woman before marriage. Society, indeed, expects sexual behavior of these women, as reflected in the canards that pervade our society regarding the sexual proclivities and needs of divorcees and widows. Therefore, if a once-married woman is going to be sexually active, it is reasonable to assume she will avail herself of contraceptive techniques as she did when she was married.

The attitudes held by society regarding premarital intercourse, however, are strong and have a profound influence on young women who have not yet firmly established their identity as a human being, or crystallized their internal value system. As a result of these proscriptions, the young women seen at KUMC often have strong but ambivalent feelings toward their sexual behavior. Several patients reported that they were unable to seek professional contraceptive counsel and treatment because seeking such help would mean admitting to themselves and others that they were going to engage in premarital relations, and they have great difficulty mak-

TABLE VII  
DATA COLLAPSED OVER AGE AND RACE

Age Range	Number of Abortion Patients
14-17 .....	560
18-19 .....	364
20-24 .....	582
25-29 .....	101
30-34 .....	17
35-44 .....	4
Total .....	1,628

ing this admission to themselves. This denial of their sexuality is so psychologically important, that many patients maintain intercourse "just happened," or that they were carried away with their emotions, although more extensive interviewing reveals a history of steadily progressing sexual intimacy in their relationship, as reported by Ehrmann<sup>3</sup> and Schofield.<sup>17</sup> The strength of cultural taboos is witnessed by the fact that some young women, if their sexual activity is discovered or if discovery seems imminent, may try to avoid parental punishment by claiming that they were raped.<sup>9</sup>

Many parents contribute to their daughters' pregnancy by their attitudes, which work to prevent a young person from learning about premarital intercourse or contraception. Parents feel the fear of pregnancy is a successful deterrent to premarital intercourse. But this is not borne out by the research of Kinsey<sup>7</sup> and Ehrmann,<sup>3</sup> which indicates fear of pregnancy may be only the third-most important reason for abstinence (after moral objections and lack of responsiveness), and is an important consideration to only 45 per cent of the sexually active females. Parents also fear that providing teenagers with contraceptive information and devices will promote their promiscuity, although no clear evidence supports this.<sup>8</sup> Indeed, in one study, only 17 per cent of a sexually promiscuous group of teenagers "took precautions," which questions the relationship between availability of contraceptives and promiscuous behavior.<sup>13</sup>

Anecdotally, many patients report they recognized their behavior and the risks, but did not go to their doctor because of the fear of lecture on morality, or worse, informing their parents. This may not be an unreasonable expectation, considering the conservative nature of medicine, and the fact that most patients' physicians are also their parents' physicians. Being peers of their parents, in terms of age, the physicians may hold the same values as they do.

The difficulty in discussing sexual matters experienced by adults is passed on to their children, who



TABLE VIII

CHI<sup>2</sup> ANALYSIS OF "GOODNESS OF FIT"  
BETWEEN NUMBER OF PATIENTS  
SEEKING ABORTIONS COMPARED TO  
EXPECTED FREQUENCY BY UNITED  
STATES POPULATION BASE

Age	<i>f</i> Observed (× 1,000)	<i>f</i> Expected (× 1,000)	(O-E) <sup>2</sup> /E
14-17 .....	560	821	82.97
18-19 .....	364	301	13.18
20-24 .....	582	319	216.83
25-29 .....	101	81	4.93
30-34 .....	17	39	12.41
35-44 .....	4	67	59.23
Total .....	1,628	1,628	389.55
Chi <sup>2</sup> = 389.55    5 df    p < .001			

have problems with heterosexual sexual communication.<sup>10</sup> The result is that almost all single patients reported they did not discuss contraception with their sexual partner.

It must also be recognized that many sexual encounters are spontaneous and unplanned, which may make contraceptive foresight more difficult.

Considering these factors, it is easy to understand why single women are more ignorant about and less effective in their use of contraceptives than are women who have been married. Additional support for this kind of reasoning is found in the sequela of abortion in single females.

The experience of pregnancy, and the acceptance by the nonjudgmental environment in which these patients are counselled, promotes more realistic handling of their behavior. This change is evidenced by the wish of the majority of these patients to obtain contraceptives, specifically, prescriptions for oral contraceptives, as reported by Robinson.

Some young people may see early marriage as the only way for a young couple to achieve the emotional intimacy they desire, and experience the sexual intimacy they may want, with the best wishes of their culture. Unfortunately, the success rate of early marriages (before age 20) is only 72 per cent.<sup>11</sup> Should the couple have gotten married while "expecting," the chance for marriage to be successful drops to 36 per cent.

The difference in contraceptive usage between the single Negro patient and the single Caucasian patient is at first difficult to understand. Among all abortion patients, Negroes are represented proportionately to their number in the United States population and comprise approximately 9.85 per cent of single patients in this study. However, this study shows that these patients have been better contraceptive users than their Caucasian counterparts. If

a greater percentage of sexually active single Negro women are using contraception than are single Caucasian women, the representative number in the abortion population, relative to the United States baseline, would suggest a higher percentage of Negro women sexually active than are single Caucasians. This is consistent with Gebhard's findings.<sup>4</sup>

But with as large a proportion at risk as seen by Gebhard, one would assume more single Negro abortion patients would be seen. Gebhard reports "the lower social level Negro pattern may be simply described: coitus is regarded an inevitable, natural, and desirable activity to be enjoyed both in and out of marriage; contraception is little known and considered at best a nuisance and at worst dangerous and unnatural; and pregnancy is accepted as an inevitable part of life"; whether it occurs in or out of wedlock is a secondary issue; one result of this is a minimal incidence of induced abortion. The upper socio-economic level Negroes have different attitudes and behavior, more similar to those of middle

TABLE IX

PERCENTAGE OF SINGLE FEMALES THAT  
ARE SEXUALLY ACTIVE BY AGE

Age	<i>Kinsey, Decade Schofeld of Birth 1910-19 Mean</i>	
13 .....	.1	.1
14 .....	.4	1.0
15 .....	2.0	1.0
16 .....	5.0	5.0
17 .....	10.0	10.0
18 .....	17.0	17.0
19 .....		19.0
20 .....		23.0
21 .....		27.0
22 .....		30.0
23 .....		34.0
24 .....		35.0
25 .....		39.0
26 .....		41.0
27 .....		45.0
28 .....		47.0
29 .....		48.0
30 .....		49.0
31 .....		49.0
32 .....		50.0
33 .....		50.0
34 .....		51.0
35 .....		51.0
36 .....		52.0
37 .....		52.0
38 .....		52.0
39 .....		52.0
40 .....		52.0

TABLE X  
CHI<sup>2</sup> ANALYSIS OF "GOODNESS OF FIT"  
BETWEEN NUMBER OF ABORTION  
PATIENTS SEEKING ABORTIONS  
COMPARED TO EXPECTED NUMBER  
AT RISK

Age Range	<i>f</i> Observed (× 1,000)	<i>f</i> Expected (× 1,000)	(O-E) <sup>2</sup> /E
14-17 .....	560	228	483.43
18-19 .....	364	335	2.51
20-24 .....	582	511	9.86
25-29 .....	101	220	64.36
30-34 .....	17	119	87.42
35-44 .....	4	215	223.07
Total .....	1,628	1,628	870.65
Chi <sup>2</sup> = 870.65    5 df			p < .001

and upper socio-economic Caucasians, in that they value family planning and the absence of illegitimate children so that they may more readily obtain some of their life goals, scholastic or vocational. A woman from this group may be more willing to obtain contraceptives. Should such a woman become pregnant, she would be more likely to desire an abortion than the woman to whom pregnancy is normal and expected.

Therefore, although the incidence of pregnancy for single Negroes is higher than that for Caucasians, this incidence would not be reflected by the number of single Negroes seeking abortions, if the patients seen at KUMC are a non-random sample from these two groups. It is apparent that there is a great deal of information we do not have. Specifically, we know little about the magnitude of the influences noted above (*e.g.*, in today's Negro society, what is the incidence of premarital sexual behavior by educational status, socio-economic status, and age? What are the incidences of contraceptive use and abortion for the same groups?).

Adolescence has been conceptualized as an age period in which a person is part adult and part child.<sup>18</sup> The adolescent normally vacillates from one sphere of behavior to the other. As one matures, the adult part predominates. Freud writes of the child operating on the pleasure principle while the adult operates on the reality principle. The former means that decisions are made from moment to moment, with primary regard being for the immediate results of the decision; while the latter means the individual's sphere of orientation has expanded to look further, to evaluate the results of today's decisions and actions. The product of the combination of the two conceptualizations is that, with maturity, one becomes more farsighted or, conversely, less nearsight-

ed. It is therefore understandable that as one who is sexually active becomes older, it is appropriate that he become more thoughtful and cognizant of the results of his life decisions. It may then become easier to recognize pregnancy as a consequence of intercourse, and act to preempt it. With maturation, the female adolescent may come to perceive herself as a woman with the potential for motherhood, which was not part of her self-concept of her changing physical and emotional self as it existed earlier in adolescence. As pointed out, our youth today have grown up in an educational system imbued with scientific attitudes and approaches. When she matures and reaches the position in her family structure where she is able to function at an adult level, the female is more able to be primarily responsible to herself rather than to her parents. With this change in role and educational heritage, she is more capable of being the master of her own fate and can more realistically control her reproductive function. The increased use of contraceptives, with age, by single female abortion patients, is likely a result of these maturational changes.

Because the number of single women who seek therapeutic abortions must be correlated to the number of women at risk, it is expected that they will not be proportionate by age to the number of single women in the population for several reasons. Not all single women are sexually active; not all single women are equally fecund due to aging processes. The women themselves alter the risk to which they expose themselves by choosing to use contraceptive devices.

In reviewing the data in *Table VIII*, it is apparent that there are two age ranges of abortion patients that are not representative of the number of single women in the population. The first of these is the age range 14-17, which showed 261 fewer abortions than one would expect. This is almost assuredly due to the fact that only a small percentage of these women are sexually active.<sup>4, 7, 17</sup> The patients in the 20-25 range are over-represented in our sample. Gebhard<sup>4</sup> reports that this range experiences the highest premarital conception rate among single women. The high number of unwanted pregnancies in this group is probably due to several factors acting in concert. This age range has a large percentage of sexually active women. They are experiencing intercourse relatively frequently, are biologically healthy and fertile, and may be less conscientious about birth control than the preceding factors warrant.

When an estimate was made of the number of sexually active persons in each age range, and these numbers were compared to the number of abortions sought in each range, the difference was even greater than in the previous comparison. In this compari-



son there are two significant groups. The first is in the 14-17 range. This group requested many more abortions than were expected. There are two explanations for the finding. One is that this group of patients are very poor contraceptive users. They use contraceptives infrequently and when they do, they do not use the most effective ones available. The younger a female is, the more difficult for her doctor to prescribe for her. A second explanation, as Kinsey<sup>7</sup> found, is that, as the decade of birth advanced for sample populations, the earlier and more rapidly the incidence of premarital coitus increased among the youngest age groups. If this trend has continued, and there is no evidence that it has not, then it is possible that we have underestimated the number of sexually active single females in this age range. Parenthetically, it should be noted that Kinsey's study of the female was published almost 19 years ago. Almost two decades of women have been born since the study, and the extent of the changes that have occurred since then is unknown. The second group which is significantly different from the norm is the single 35-40 year group. This is the most active group in terms of coital frequency, according to Kinsey.<sup>7</sup> With this in mind, two explanations are plausible. One is that this group is biologically less fertile, due to either gynecological surgery or menopause. The other explanation is that this group is significantly better contraceptive users.

In personal interviews with approximately 250 abortion patients, several points became obvious to the author. Almost all patients regarded favorably the opportunity to discuss their unwanted pregnancy and to obtain information about human sexuality in a relaxed nonjudgmental environment. No patient was able to report being informed about contraception in school, even in those cases where courses in sex education existed. Nevertheless, all patients felt that such information should be provided in the public schools. Some adults are resistant to this, feeling that knowledge about human sexuality will lead to experimentation. This belief concerning sexual matters is untrue,<sup>15</sup> as are others noted above.

Calderone<sup>1</sup> states that physicians, if they are to meet their potential as providers of health care to society, must assume a role of leadership in promoting these areas of education. For a physician to fulfill this role there are two things needed, in addition to the prerequisites of the desire and willingness to do so. Accurate and up-to-date information is needed, and this information needs to be imparted.

We have a foundation of information for which we are greatly indebted to a number of researchers. As noted in the previous discussion, some of this information may no longer be accurate. We need a continual up-dating of normative sexual behavior and need to better understand the influence of cur-

rent cultural values, legislative changes, socio-economic status, racial subcultures, education, medical advances (*e.g.*, the oral contraceptive), and religious training. We know very little about contraceptive usage in our single population, for example, although we are becoming more and more familiar with the effects of coitus without contraception.

Pauly and Goldstein<sup>12</sup> found that physicians felt they achieved adequacy in knowledge of sex as a function of informal experience rather than formal education. Fortunately, education in the field of human sexuality is being seen as an important part of medical education and some medical schools, such as Indiana University, have instituted ambitious programs.

With the support of the medical profession, perhaps more public school systems will be able to begin programs like those outlined by Gendel.<sup>5</sup> This kind of program will not only provide information about human sexuality and meet the needs of some young people who are not presently being served, but also more successfully meet the requirement of our society to prepare our youth for responsible adulthood at an earlier age.

## Summary

The pre-conception contraceptive history of two overlapping samples of patients seen at KUMC for therapeutic abortions was subjected to statistical analysis. It was found that married, divorced, separated, and widowed patients did not differ in contraceptive usage, although they did differ as a group from single women in such usage. Single Negroes in the sample were found to use contraceptives more often than single Caucasians. As the single Caucasian female increases in age, she tends to use contraception more often. The ages of single abortion patients do not reflect their representation in the United States population. The ages of single abortion patients are even less representative of the estimated number of sexually active single females in the population by age. Cultural factors in our society are fairly clearly responsible for some of these findings, but are not well enough understood at present to explain others. It is apparent that further research is needed if we are to better understand and adequately handle the problem of unwanted pregnancy. There are indications that we are not using the knowledge we already have as well as we might, and, as a consequence, a number of young women in our society are paying a high price.

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(Continued on page 329)



# Clinical Cardiology

## *The Syndrome of Midsystolic Extra Sound and Late Systolic Murmur*

WILLIAM E. SHELL, M.D.,\* *La Jolla, California*

MID-LATE SYSTOLIC clicks and the associated late systolic murmurs are frequently encountered in clinical practice. Concepts concerning the generation of these auscultatory phenomena have undergone rapid evolution in the last ten years. Traditionally, these sounds were considered to be benign extracardiac events generated by the motion of pleural-pericardial adhesions. However, it is now established that they are related to mild mitral regurgitation and emanate from tension on a large ballooning, redundant posterior mitral valve leaflet. Moreover, in a substantial proportion of cases, there is a strong familial association of mid-late systolic extrasounds and late systolic murmurs indicating a congenital etiology for the valvular abnormality.

### **Auscultation**

The mid-late systolic extrasound or click is a high pitched transient, usually best heard at the apex but often radiating widely. The most salient feature is its extreme variability. The sound may vary with position or respiration in an unpredictable fashion. Its quality, intensity, and position in the cardiac cycle can vary from moment to moment without provocation. In certain patients, the sound is appreciated only in the standing positions, while in others, only in the left lateral or the supine position. Thus, careful auscultation will be necessary to detect its presence. Frequently, there is an associated systolic murmur of mitral regurgitation. In most instances the murmur will be confined to late systole and follow the systolic click. However, pansystolic and mid-systolic murmurs also occur with the systolic extrasound and also indicate mitral regurgitation. The murmur also displays some variability, but to a lesser degree than the sound. It may be high pitched and is frequently located at the apex with poor radiation. The murmur, as well as the sound, may be difficult to hear and, again, careful auscultation is necessary.

### **Cineangiocardiology**

The cineangiocardigrams in the majority of patients with either systolic extrasounds or late systolic murmurs show a peculiar retroversion of the posterior mitral leaflet during mid to late systole. The valve leaflet balloons backward like a sail caught in a strong wind and fills with contrast medium. The systolic extrasound occurs at the height of the excursion of this redundant leaflet. The floppy valve can be easily seen in either oblique position. Frequently, there is a mild degree of mitral regurgitation usually confined to late systole.

### **Pathologic Studies**

There have been few postmortem examinations reported in patients with these auscultatory phenomena. Barlow reported a man who died suddenly and who had enlarged redundant posterior leaflet with normal chordae tendineae. We have examined the valves of two patients with midsystolic extrasounds, late systolic murmurs, and abnormal cineangiocardigrams. The findings were similar in both patients. The anterior leaflet area was 2-4 times larger than normal, while that of the posterior leaflet was 4-6 times greater than expected. Both patients had extensive deposition of a sulfated mucopolysaccharide in the media of the valve leaflets while the chordae tendineae, as well as the coronary arteries, were normal.

### **Clinical Syndrome**

The majority of patients with either midsystolic extrasounds or late systolic murmurs are asymptomatic and the auscultatory phenomena are found incidentally. Two major symptom complexes merit discussion. Many of the patients complain of chest pain. The pain is substernal and crushing in quality. It is brought on by exercise but may occur at rest. It lasts minutes to hours and is poorly responsive to nitroglycerin. The pain has been attributed to angina pectoris, coronary insufficiency, myocardial infarction, and noncoronary chest pain depending on which components are most prominent in a particu-

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lar patient. Coronary arteriograms have been normal in patients studied. The bouts of prolonged chest pain rarely are accompanied by enzyme rises. In a recent study of young females with chest pain, positive exercise tests and normal coronary arteries, 4 per cent had the midsystolic click-late systolic murmur syndrome. The exact etiology of the chest pain is currently obscure.

These patients frequently complain of palpitations. Several types of arrhythmia have been documented, including premature ventricular contractions, exercise induced ventricular tachycardia, paroxysmal atrial fibrillation, and paroxysmal atrial tachycardia. Etiology is not entirely clear. Sudden death may occur in patients with the syndrome and among their first-degree relatives.

### Electrocardiograms

Electrocardiograms are frequently abnormal in patients with late systolic murmurs or mid-late systolic extrasounds. The abnormalities consist of T-wave flattening and inversion in leads II, III, avf, V<sub>4-6</sub>. Evidence of transmural myocardial infarction is seen rarely. Exercise electrocardiograms in patients with chest pain and auscultatory evidence of floppy valves are frequently positive exhibiting ST segment depression, despite normal coronary arteriograms. Exercise testing may precipitate arrhythmias, including multiple premature ventricular contractions and ventricular tachycardia. Thus, such tests in patients with the ballooning mitral valve syndrome should be performed with caution and careful monitoring.

### Diagnostic Studies

A number of noninvasive tests may be used to establish the origin of the late systolic murmur as mitral regurgitation. Amyl nitrite administration causes the mid-late systolic extrasound to move earlier in systole frequently merging with the first heart sound. The late systolic murmur also moves earlier in systole and may become pansystolic; its intensity does not change.

Handgrip may be very effective in evaluating these auscultatory phenomena. Handgrip may bring out a systolic extrasound which is evanescent and difficult to document.

Ultrasound examination of the mitral valve often is characteristic in the syndrome. Abnormal motion of the anterior leaflet, as well as clear separation of the leaflets on the echogram, are common. When present, these signs are nearly pathognomic of the ballooning posterior leaflet syndrome.

A majority of patients with either midsystolic extrasounds or late systolic murmurs are asymptomatic. Their prognosis for longevity appears independent of the extent of abnormality in the mitral leaf-

lets. However, the occurrence of chest pain and arrhythmias is associated with considerable prognostic uncertainty. The rate of progression of the mitral regurgitation is unknown. Thus, asymptomatic patients with the auscultatory phenomena of the syndrome must be followed periodically.

When chest pain is prominent, treatment with propranolol and long acting nitrates may be initiated. This mode of therapy has afforded significant relief in some patients. Control of arrhythmias is indicated in light of the incidence of sudden death. Ventricular extra systoles should be treated with propranolol and digitalis, while atrial arrhythmias can often be managed effectively with digitalis alone.

## Anomaly Complicating Operation

(Continued from page 283)

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**Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.**

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# *The President's Message*

## *E Pluribus Unum*

We all remember the story which dates from pre-Roman times of the woman who demonstrated to her sons that small sticks break easily individually, but are impossible to break when they are bound together. For some childish erroneous reason, I have always associated the Roman fasces with this tale, and thought it symbolic that the legions who subdued the world were led by an emblem composed of a bunch of rods bound together, indicating strength from union. The fact that the core of the bundle was an ax represented a hypertrophy of the central rod into a potent weapon.

Our medical brotherhood has increasingly been fragmented by specialism, by special interest, by economic forces, and by pressure from without acting in the name of great social good. It is as though the fasces has been taken apart. The ax has atrophied. If one were to reassemble and bind together these sticks, would the ax again grow? Perhaps not, but at the very least, the sum of all those strengths would exceed that of the separate individuals.

It seems likely that the doctors of our various specialty societies and the doctors who are salaried, the doctors who have no longer faith in the union of physicians need encouragement to explore the strength of reunion. To this end, Doctor Hughes and his committee are making overtures to the government physicians. Doctor Mowry is formulating changes in our Constitution to accommodate them. Doctor Rieke has spoken with us of this rejoining, and this has already begun to bear fruit. The Commission on Specialty Practices is reminding specialty societies of their rights to representation in our Medical Society, including that we be permitted to stand united with them in socio-economic skirmishes.

Changes have been made in the Medical Society



staff, and new services are under consideration in order to reach out to the disillusioned.

United we stand, divided we fall. Please help us all to a better union.

*E Pluribus Unum*

A stylized, handwritten signature in dark ink. The signature reads "Kenneth L. Galum M.D." with a large, flowing initial "K" and "G".

*President*





The quest for identity has always been one of man's greater problems. As with most value concepts, the goal is somewhat misconstrued. Identity is always present. The problem lies in the individual's recognition of his own identity and a rational relationship with others around him. The realization of an acceptable identity in life is made more difficult by the fact that man has never established a wholly satisfactory concept of identity in death.

Obviously, death is almost as old as life. The reasoning powers which have set man apart from his fellow animals—and forced him to identify himself as an individual—have altered his concept of life and, therefore, death. Nothing is so inevitable, irrevocable, or equable as death, but nothing has occupied his life so much as the effort to prevent it, retrieve life from it, or put that of other men before his own. His rational mind admits it while trying to circumvent it. He has devised various designs of an afterlife—a process of accepting death without giving up life—most of which have been limited by the paucity of his intellect and, therefore, entail some anthropomorphic displacement to some other place of being. In the expectation that the body may be reclaimed by the spirit—or just in reluctance to give up the physical substance of the deceased (which he will shortly be)—he injects it with chemicals to retard its deterioration. Modern man smiles at the aboriginal custom of equipping the dead with food and hunting gear for use on the “Long Journey” but dresses his own in suitable attire, applies cosmetics to simulate life, confines him in a capsule of sufficient cost to assuage grief and guilt, and consigns him to a specified geographical location, the surface of which will be attended in perpetuity. Man cannot believe that death is the end for he cannot then account for this term of physical existence which he enters through no choice of his own and knows from earliest consciousness that he must leave. His spiritual philosophers have offered a variety of designs of death and afterlife, and man has embraced them to varying degrees, usually depending upon how close he felt to the fact. The promise of immortality or transmigration or resurrection or whatever has never been strong enough for him to understand and un-

equivocally accept death, hence the effort to understand and justify and retain life has constituted his prime but uncertain struggle.

The physician more than any other has been a part of this struggle and, therefore, has taken a major role, whether he realizes it or not, in the development of the ethics of the life-death relationship. The gravity of his position is compounded by the fact that he must approach it on three levels: that of his patient whom he is committed to protect from death, that of the patient's family (society?) whose interests may be close to but not identical with the patient's, and his own feelings (identity?). Medical successes of the past have produced two salient problems. The first is the survival of many who are not only non-productive but needful of total support. Most of these are the elderly, of course, but with increasing effect the damaged and the incomplete are surviving beyond previous limits. The second and related problem is the spatial and productive capacity of the planet to support a finite but unknown number.

Identity, although considered intensely personal by its more active seekers, is basically a social relationship. So, too, is death. It is necessary for the physician to keep this in mind since his professional attitude toward it will be the product of his own identification and social pressures. As the public accepts a greater share of the support of the aged and ill, it will expect to impose its wishes on their medical care up to and including death.

Kansas has achieved favorable comment as the first state to develop a statutory definition of death. This, of course, brings us no closer to an understanding of or adjustment to death. It is primarily a legalistic formula designed to protect the donor, recipient, and operator in cases of organ transplant. How it may be applied to other aspects of the life-death relationship remains to be seen, but it is an official recognition of society's role in this basically medical decision.

Euthanasia has been pondered from earliest times, and disposal of the nonproductive—or of the individual by his own choice—has been a part of many

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## *Personalities*—IN KANSAS MEDICINE

John F. Benage, Fort Scott, addressed the Kansas State Nurses Association meeting. The talk was on Problem Oriented Records.

Russell J. Eilers, Kansas City, has been named a special consultant to the KU Vice-Chancellor for Health Affairs.

Elected as president of the Lawrence Rotary Club was David L. Hiebert, Lawrence.

Paul E. Kauffman, Hesston, has announced his acceptance of a position in AeroSpace Medicine at the Manned Spacecraft Center, located near Houston, Texas.

The Ashley Clinic of Chanute has acquired a new staff member. Newton C. McCluggage moved here from Kansas City.

John A. Lynch, Topeka, was conducting group education classes for arthritis. Topics were, What Arthritis Is and How It Can Be Treated Medically and Surgically.

James A. Ward, Belleville, attended the KUMC postgraduate course on children's diseases.

The Kaw Valley Heart Association elected Samuel C. Petrie, Mission, the new chairman of the board.

Wayne G. Parker, Emporia, has joined the staff of the Student Health Teachers College. Dr. Parker moved from Garden City.

Evalyn S. Gendel, Topeka, presented a lecture at the Saint Mary College. The topic was, What Does Masculinity and Femininity Mean in Society Today?

As part of the University for Man Doctor's Series at the Kansas State University, Hilbert P. Jubelt, Manhattan, spoke on the topic, Government and Medicine. William R. Durkee, Manhattan, discussed the role of modern medicine.

Rex R. Fischer, Manhattan, discussed abortions. His talk was presented to the members of the Optimists Club.

William Nice, Topeka, presented a talk on rehabilitation and management of narcotic addiction to the Kiwanis Club recently.

The 24th annual Midwest Cancer Conference held in Wichita was attended, among others, by William K. Walker, Sedan; Henry Aldis, Fort Scott; E. J. Chaney, Belleville; Paul A. Baumann, Wichita; Edwin L. Petrik, Topeka; F. G. Freeman and J. W. Jacks, Pratt; Richard A. Siemens and J. T. Grimes, Lyons; Richard E. Speirs, Dodge City.

Public seminar on diabetes was conducted at Dodge City Community College by Morgan U. Stockwell, Dodge City.

George L. Wadsworth, Norton, has been elected a Life Fellow in the American Psychiatric Association.

John Mull, Hutchinson, discussed birth defects as related to mental retardation at a public meeting sponsored by the Reno County Association for Retarded Children.

Walter A. Carr, Junction City, celebrated his 95th birthday recently. He had practiced at the same location since 1906.

Ruth Montgomery-Short attended a seminar on Infectious Diseases at Nassau recently.

# Official Proceedings

## *1972 Meeting of the House of Delegates*

Transactions of the 113th Annual Session of the Kansas Medical Society are published in this issue of the JOURNAL.

Resolutions not previously published in the JOURNAL were introduced and referred to Reference Committee A (Gerald L. Mowry, M.D., Manhattan, Chairman), or Reference Committee B (Spencer C. McCrae, M.D., Salina, Chairman).

The resolutions are printed in numerical order under the minutes of the second House of Delegates. Although they appear in the minutes of the second House, Resolutions 72-15 and 72-40 were unanimously adopted at the meeting of the first House on Sunday, May 7, 1972.

The resolutions which failed to pass are retained in the minutes at the Executive Office, but are not recorded here.

### FIRST SESSION

The first meeting of the House of Delegates was called to order by the Speaker, Dr. Clair C. Conard, at 3:00 p.m. on Sunday, May 7, 1972, at the Hilton Inn, Salina.

After some announcements, Dr. William J. Reals, President, introduced the following members of the Blue Ribbon Committee to Study Blue Shield:

The Honorable Frank Carlson, Concordia, Chairman

Mr. J. Hambleton Abrahams, Topeka

The Honorable Edward F. Arn, Wichita

John L. Morgan, M.D., Emporia

Mr. Doyle Rahjes, Agra

Mr. George Trombold, Wichita

Senator Carlson spoke briefly and asked Mr. Arn to read the report of the committee. The House accepted the Blue Ribbon Committee report.

Dr. Yoder read the minutes of the last meeting and moved that the report on Resolution 71-3 be corrected to show the resolution carried. The minutes were then approved as amended.

Congressman Bill Roy was introduced and spoke to the House, saying he was still a member of the Society, and proud of it.

Dr. Richard E. Palmer, of Alexandria, Virginia, AMA Trustee, spoke to the House.

It was announced that Mr. Swenson resigned and earlier today Mr. James Agin, of Indianapolis, had been employed in his place. He will begin his duties about June 1, 1972.

The House voted to declare Lt. Gen. Alonzo A.

Towner, Surgeon-General of the U. S. Air Force, and Mr. Blake A. Williamson, Attorney in Kansas City, honorary members.

### Woman's Auxiliary

Mrs. Donald R. Pierce, President of the Woman's Auxiliary to the Kansas Medical Society, read the following report from her organization.

It has been a privilege for me to serve as president of the Woman's Auxiliary to the Kansas Medical Society this year. I have never worked with a more concerned, dedicated, informed, and delightful group of women than our Kansas Auxiliaries. Their accomplishments within their various communities cover a wide area.

Health careers or health manpower, as it is now called, stressed recruitment and education through future nurse clubs, medical careers clubs, a health fair, distribution of materials, and use of the film "Horizons Unlimited." Many county auxiliaries have loans and scholarships available to help those interested in the health service fields.

Also, we have the State Memorial Loan Fund. Loans are granted to students in nursing and paramedical fields, and at the present time, there are six loans out, totaling \$1,530.00.

Under the heading of Mental Health, many programs on alcoholism and drug abuse were given. For the alcoholics, Joan Colip told of the work being done at Valley Hope in Norton. In the field of drug abuse, many panel discussions were held, and in Topeka we were privileged to hear Dr. Deter, of El Paso, Texas, speak on "Drug Abuse Prevention." In many schools, the film "Drugs Are Like That" was shown to students, followed by a question and answer session. Many of our members work as volunteers in mental health offices, institutions, and work with retarded and handicapped children. Auxiliaries gave gifts and monetary contributions to the Osawatimie and Larned state hospitals.

International health activities is a project undertaken by almost all county auxiliaries, large or small, and many members-at-large also contribute. Drugs were collected and 174 barrels, or 13,675 lbs., were sent to project CONCERN. One hundred and nine barrels, or 9,815 lbs., were sent to World Medical Relief. Lepers bandages, Johnny coats, layettes, knitted slippers, hygiene kits, rolled bandages, quilts, exercise balls, baby blankets, children's dresses, pil-



lows, dolls, rugs, and baby gowns were also made for the project.

Betty Crocker coupons provided \$129.00 to help train a village medical assistant for project CONCERN. Eighty-six dollars was made from the collection of stamps, \$66.00 from selling old aluminum, and Midwest Surgical Supply gave two truck loads of equipment. "The Walk for Mankind" in Wichita, collected \$126,000.00, with 8,000 walkers.

I might interject here that Edith Lessenden, one of our past state presidents, will become the new national auxiliary International Health Activities Chairman in June.

AMA-ERF received tremendous support from all members, and I've been told that Kansas is to receive an award at the Woman's Auxiliary to the AMA meeting in San Francisco. Christmas cards, fruit cakes, jewelry, note paper, watches, playing cards, umbrellas, wood products from Jamaica, and many other items were sold, and a check in the amount of \$18,363.16 will be presented to the Dean of the KU Medical School on Tuesday night at the banquet.

Legislation, AMPAC-KaMPAC, national health insurance all are a concern of Auxiliary too. Many good workshops were presented on legislation, and we were encouraged to support KaMPAC and AMPAC. At the AMPAC workshop in Washington, D. C. in March, I was honored to accept a plaque for Kansas for third place. It was awarded on the basis of the number of women AMPAC members in Kansas. The Mediredit film and program was also presented to many groups.

Several safety programs were given, one of which was a safety skit depicting various hazards in the home. A bicycle safety check in cooperation with the local police department was held, and the defensive drivers course was given in Lawrence with an attendance of 45 members.

In addition to the above mentioned activities, Auxiliary members helped with the bloodmobile program, gave package programs on smoking and venereal disease, and helped with immunization programs. Dr. and Mrs. Hunnicutt trained 17 teenagers for an immunization project in Central America. Auxiliary members are also active in hospital auxiliaries, and in Salina the women help "Prisoners of War" wives and "Missing in Action" wives at the Schilling Manor.

We have a new and exciting health careers project. We are in the process of renovating a discarded State Board of Health mobile chest x-ray van. We have been working in conjunction with the Kansas Health Museum in Halstead on this project. We plan to set up various health career displays and show continuous film strips in this mobile unit. Our hope is to inform our young people about the vari-

ous health related fields available and, hopefully, then recruit them. By 1975, the health industry will be the largest industry.

Our membership now totals 1,122 within 29 organized component auxiliaries. Many are small in membership, but large in their accomplishment.

A new innovation this year were the regional workshops which were conducted in five different cities across the state.

There are three Kansas Auxiliary members who are currently serving on the national auxiliary level: Lela Mae Young, Kansas City, is a Northcentral Regional Vice President; Edith Lessenden, Topeka, is a member of the Board of Directors; Sally Jarrott, Hutchinson, soon to become state president, is on the Editorial Advisory Board of *md's wife*, our national auxiliary publication.

The Auxiliary is deeply appreciative of the fine rapport we have with the Kansas Medical Society. This report would not be complete without an expression of gratitude to Dr. William Reals for his encouragement and unqualified support of all of our Auxiliary activities; to Oliver Ebel and the Medical Society staff for their efficient help; to Dr. David Gray, Editor of the JOURNAL OF THE KANSAS MEDICAL SOCIETY, for allowing us again this year the Auxiliary Annie page in the monthly JOURNAL; and to the Advisory Committee on Auxiliary for their willingness to serve.

### The Editor

Doctor Gray, Editor, read the report of the Editorial Board:

Your Editorial Board makes herewith its annual report which comes to you at no extra charge, although the Board is not above considering such as a source of revenue. I can report that the JOURNAL is still afloat. The stern is a little lower in the water, but the decks are not yet awash. The Board continues to man the bilge pumps which, of course, is a reference to the financial situation rather than the scientific text.

The report this year can be presented in the best bad news-good news tradition. The bad news is, of course, that we are still losing money. The good news, however, is that we are not losing it as fast as we were. Even so, it appears that our reserves will be used up within the next few months. At the present time, we are publishing an average of 2,700 copies monthly. In 1971, the total cost per copy was \$1.29. Income from subscriptions was 17 cents per copy, and from advertising 78 cents per copy, for a total of 95 cents, leaving a deficit of 34 cents per copy. This brings the average deficit per month to \$918.00. We have considered two remedies: either import a business manager from Boy's Town, or re-

quest an increase in the subscription rate. Since our present business manager is too old to be turned out and anyway we would miss his optimism and enthusiasm in the face of adversity, we have chosen the latter. We are implementing by submission of a resolution the request for an increase mentioned last year but deferred pending another year's experience. The present subscription rate is \$4.00 annually, and we are requesting an increase to \$10.00. You will recall that active members of the Society receive the JOURNAL at half the standard price, and that this is included in the dues. Our business manager informs me the increase can be accommodated in the same way, so, as the saying goes, when it becomes inevitable, relax and enjoy it.

You will note in future issues some change in format in the form of limited interspersing of text with advertisements although not, we hope, to the extent displayed in some journals. This does not represent a change of heart on the part of your reactionary, mossback Board but simply a practical approach to an increasing problem. The bulk of our advertising is supplied through the State Medical Journal Advertising Bureau in preprinted form. It is impossible, at times, to accommodate these advertisements in accordance with their page make-up and advertisers' requirements for placement without having blank pages, which must be filled with free material. Monthly reports and shorter items will, therefore, appear on these pages as need dictates. It would be appropriate at this point to express appreciation to these advertisers, both local and national, for the support that makes our publication possible. I do this not only to curry favor with those advertisers, but also in the hope of getting honorable mention in some future congressional investigation or exposé column investigating corruption in the medical-pharmaceutical complex.

The loss of a valued associate whom one takes for granted until the moment of departure endows her with an aura of irreplaceability which can cause a particular dismay, as many of you know from experience. Ours came last fall with the resignation of Mary Rogers, who for ten years performed so excellently as Managing Editor. Her efficiency, judgment, and workmanship were able to compensate for the shortcomings of the Editorial Board, and it is grateful to her. The prospect of finding a replacement produced a moment of panic which was relieved more quickly and fortunately than we deserved without even going outdoors. Val Braun, whom all of you know from her years of loyal service in the Society office, was prevailed upon to assume the position, and it is hard to imagine a smoother transition. Val has brought her characteristic energy and alertness to the job, and the Editor is already grateful for that touch of iron in the velvet

glove that moves him off his characteristically dead center.

The Board continues to solicit your interest, comments, and advice. The JOURNAL has no reason for existence except for its service to the physicians of Kansas. Your Board is only the instrument of this service and can reflect your wishes only to the degree that you express them.

### Other Reports

Dr. Norton L. Francis reported on KaMPAC and stated there were 451 Kansas members at the present time, the all-time record for this date of the year.

Mr. Hank Parkinson reported on the success of the Information and Education Project of this Society.

Mr. Clyde Hill, of Yates Center, Chairman of the House Ways and Means Committee, reported on legislative appropriations for health. He said this amounted to about \$69.5 million and that fees and federal money would double this amount. The appropriations by the legislature for health amounted to \$30 per capita.

### The Executive Director

Mr. Oliver E. Ebel, Executive Director, presented an oral report, in which he expressed his appreciation to the staff at the Executive Office for the dedication with which they served the Society. He also commented on possible legislation that would come before the 1973 Legislature. That portion of the report was referred to the Legislative Committee. He then read the following:

I have often said before that I have a most wonderful bonus—the annual opportunity to travel with and to regularly meet with your President.

I wish I could take the afternoon to tell you what Dr. Reals has done directly for the Kansas Medical Society, and indirectly through his infinite national and international contacts. Here in outline form are a few.

I will challenge any other candidate for the best Kansas salesman with the nomination of Dr. Reals. His is a fierce pride in our state, in our people, and most particularly in the Kansas Medical Society. At every opportunity, he tells others of what we are doing, and he speaks with a contagious enthusiasm.

His absolutely unbelievable energy gives him the rare ability to successfully engage in several different activities at one time. Over the year, I discovered at least three keys to his dynamic leadership: (1) a fantastic memory with virtual instant recall, so the facts on any question are with him when needed; (2) the ability to delegate authority to others; (3) quick decision making.

I could identify many successes Dr. Reals has directed for the Society this year—remember, one year



ago, he pointed toward expansion of the Medical School as a principal objective?

He asked many people to help, especially your fabulous Legislative Committee, and it was done while Dr. Reals was President.

He promised you, one year ago, a Blue Ribbon Committee to study the Society's relationship with Blue Shield. His leadership directed this committee to consist of the most notable citizens of this state, with the Honorable Senator Frank Carlson to be its chairman. This committee has met and you will have a report today.

In addition, there are many other accomplishments—the first formal meeting in years, and a productive one, with the Board of Healing Arts, and many with other health related agencies. Pending your action on Wednesday—another monumental first for this Society—the formal organization of a peer review system under a foundation may be accomplished.

So, it has been an outstanding year filled with things the Society has not done before. You are deeply in debt to Dr. Reals, and so am I, for his counsel and his tolerance, and for my opportunity to associate with a great person, a great president.

As the year closes, you realize also what has not been done. That is why you have a new president with exciting new plans and aspirations. Dr. Kenneth L. Graham will tell you about these before the convention is over. His determination in your behalf is awesome. There will be action that will hearten you all. If a beginning was made this year, watch how Dr. Kenny will put these things in motion—or better yet—come along with him.

### The Constitutional Secretary

Dr. Emerson D. Yoder, Constitutional Secretary, presented the following summary of the membership of the Society for 1972.

Dues paid members .....	1,534
Delinquent members .....	187
Delinquent student members .....	57
Emeritus members .....	112
In-service members .....	6
Leave-of-absence members .....	29
Personal exemption .....	8
Retired members .....	69
Honorary member .....	1
Total .....	2,003

This compares with the membership in previous years as follows:

1966 Total membership .....	1,884
1967 Total membership .....	1,875
1968 Total membership .....	1,895
1969 Total membership .....	1,909
1970 Total membership .....	1,921
1971 Total membership .....	1,990

William J. Reals, M.D., President, reviewed the work of the past year and was pleased to announce that the expansion of KU to produce more physicians had carried. The foundation comes before the House on Wednesday. He hoped the Society would continue its effort to expand the production of physicians in family practice. He stated the Society had begun conversing with the Board of Healing Arts, and he hoped this would continue. He complimented the Woman's Auxiliary on new projects undertaken.

Then Dr. Reals said, "Our health delivery system in Kansas is sound. There is a shortage of physicians in Kansas, but we are well on the way of resolving this. Let's talk up Kansas. We must keep doctors in Kansas.

"Our political involvement is through KaMPAC. We must support this organization. I hope we will continue our Public Relations efforts. I see divisiveness as the most serious problem. I hope we can all work together and that we will all support the AMA. I owe you all a debt of gratitude, and I know Dr. Graham will be a great president. I wish him every success."

## SECOND SESSION

The second session of the House of Delegates was called to order by the Speaker, Clair C. Conard, M.D., at 8:30 a.m. on Wednesday, May 10, 1972 at the Hilton Inn, Salina.

Ballots were distributed for the election of officers, speaker and vice speaker.

The tellers reported the results of the election as follows:

PRESIDENT-ELECT: Thomas F. Taylor, Salina

FIRST VICE PRESIDENT: John N. Blank, Hutchinson

SECOND VICE PRESIDENT: John W. Travis, Topeka

CONSTITUTIONAL SECRETARY: Phillip A. Godwin, Lawrence

TREASURER: Chester M. Lessenden, Jr., Topeka

AMA DELEGATE: George E. Burket, Jr., Kingman

AMA ALTERNATE DELEGATE: Herman W. Hiesterman, Quinter

SPEAKER: Clair C. Conard, Dodge City

VICE SPEAKER: M. Robert Knapp, Wichita

The caucus of the Council districts announced the selection of the following to serve as councilors and alternates from their respective districts:

DISTRICT 1: Wayne O. Wallace, Atchison, Councilor; Delbert L. Larson, Hiawatha, Alternate.

DISTRICT 3: Donald J. Smith, Overland Park, Councilor.

DISTRICT 5: Gerald L. Mowry, Manhattan, Coun-



cilor; Richard H. O'Donnell, Clay Center, Alternate.

DISTRICT 8: Sigurd S. Daehnke, Winfield, Councilor; Norman H. Overholser, El Dorado, Alternate.

DISTRICT 9: Kermit G. Wedel, Minneapolis, Councilor; Jack E. Lungstrum, Salina, Alternate.

DISTRICT 14: Wendale E. McAllaster, Great Bend, Councilor.

DISTRICT 17: Galen W. Fields, Scott City, Councilor; Cecil E. Petterson, Syracuse, Alternate.

DISTRICT 18: Alex C. Mitchell, Lawrence, Councilor; David A. Leitch, Garnett, Alternate.

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## RESOLUTION NO. 72-1

### Home Health Care

*Resolved*, That the Kansas Medical Society supports and commends any recognized body who endeavors to provide or underwrite home health care.

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## RESOLUTION NO. 72-2

### Visiting Nurse Associations and Similar Home Health Care Agencies

*Resolved*, That the visiting nurse associations and all similar home health care agencies be supported in their attempt to receive more third-party coverage for medical and health care efforts in the home, provided that adequate and continuous training, accredited by the proper local medical society, is available to qualify such personnel for increasing responsibilities in their role, when such is ordered and directed by the patient's personal physician.

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## RESOLUTION NO. 72-3

### Diploma Nursing Schools

*Resolved*, That the Kansas Medical Society continue to endorse and support those diploma nursing schools who find it feasible to remain in operation; and be it further

*Resolved*, That the Society encourage state funding for nurse education, including funding of diploma schools.

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## RESOLUTION NO. 72-4

### Physician Shortage

Not adopted. Combined with No. 72-38.

## RESOLUTION NO. 72-5

### Title XIX "Medicaid" in Kansas

*Resolved*, That the Kansas Medical Society again go on record as requesting the State Department of Social Welfare in the State of Kansas to follow the letter of the law in the administration of the Title XIX program in Kansas.

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## RESOLUTION NO. 72-6

### Foundation

*Resolved*, That the Kansas Foundation for Medical Care, when dealing with governmental agencies, may function only as an independent contractor.

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## RESOLUTION NO. 72-7

### Direct Billing

*Resolved*, That the doctors of Kansas be encouraged to return to the two-party relationship and bill the patients directly for their services, providing that the doctors will endeavor to help their patients get reimbursement from third-party carriers.

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## RESOLUTION NO. 72-8

### Relationship with Blue Shield

*Resolved*, That the Kansas Medical Society approve the report by the Blue Ribbon Committee on Blue Shield; and be it further

*Resolved*, That the implementation of all necessary actions be referred to the Council.

## REPORT OF THE BLUE RIBBON COMMITTEE TO STUDY BLUE SHIELD

The Honorable Senator Frank Carlson, *Chairman*

The Non-Profit Medical Service Corporation Act, enacted in 1945, under which Blue Shield was created, was adopted by the State Legislature for the basic purpose and intent of serving the people of Kansas.

Although the Blue Shield Plan was originally sponsored by the Kansas Medical Society, the plan has since grown to a point where some 700,000 Kansans are now enrolled under it, and at this point in time, the plan is not and should not be regarded as a plan sponsored by the Kansas Medical Society.

Accordingly, the public should not be given any impression that the plan is "The Doctors' Plan."

In fact, some years ago, the name of the plan was changed from Kansas Physicians Service to Kansas Blue Shield.

However, this committee believes that the physicians of Kansas should continue to maintain a vital interest in the success of the Blue Shield Plan in order to better serve their many patients enrolled under it.

At the present time, peer review is being and has been performed by Blue Shield by means of its employing Kansas physicians to perform that service. Peer review has not been performed and should not be performed by the Kansas Medical Society as such. The committee is of the opinion that peer review would be better and more effectively performed by a foundation whose services would be available to all carriers licensed in the State of Kansas.

The committee takes the view that the registration of fees and the establishment of range maximums would more appropriately be suitable functions for a foundation.

In the opinion of the committee, the participation by individual Kansas physicians with Blue Shield is beneficial to the people of Kansas, 700,000 of whom are now subscribers. There is no reason, however, why individual Kansas physicians should not have similar participation with other carriers. Neither does the creation of a foundation in any way preclude such participation.

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#### RESOLUTION NO. 72-9

##### Reorganization of Medicine

*Resolved*, That the delegates from Kansas to the AMA be instructed to submit a resolution at the next session of the AMA House of Delegates denouncing the AHA action; and be it further

*Resolved*, That this resolution to the AMA contain methods to implement the active resistance to such concepts.

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#### RESOLUTION NO. 72-10

(Combined With No. 72-60)

##### Changes in Malpractice Laws

*Resolved*, That the Kansas Medical Society Committee on Malpractice undertake the following positive programs:

1. Further study to determine correctable fundamental causes of malpractice actions, and
2. Through the State Legislature work toward passage of a Uniform Arbitration Bill (HB-1066), reduce the present statute of limitations and modify the doctrines of *res ipsa loquitur*, informed consent and respondeat superior (captain of the ship), and

3. Through the State Insurance Commissioner, prevail on the Legislature to require mandatory reporting of premiums, claims (filed, won, lost, amount of settlement) by providers of professional liability insurance, and establish minimum cancellation notices, and

4. Survey the Kansas Medical Society membership to determine premiums paid compared to claims to determine propriety of prevailing insurance rates; and be it further

*Resolved*, That the Kansas Medical Society and other related professions continue to work together with the Kansas Bar Association and Legislature to reduce the malpractice exposure, so that physicians will prefer to remain in or be attracted to practice in Kansas.

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#### RESOLUTION NO. 72-11

##### Physicians' Assistants

*Resolved*, That the Commission for Education continue its study of programs for the education and training of physicians' assistants in Kansas.

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#### RESOLUTION NO. 72-12

##### Physician Proficiency

*Resolved*, That the Kansas Medical Society, in conjunction with the University of Kansas Medical Center, embark upon a study of the entire subject of physician proficiency and educational requirements. The study should include consideration of at least the following points:

1. The definition of minimum (educational) requirements at graduation from Medical School.
2. The minimum and ideal amounts and types of continuing education necessary to remain proficient.
3. An ongoing program of education, review, and required recertification of basic emergency procedure skills for all physicians.
4. An evaluation of methods to assure proficiency.
5. The educational value of contact with patients and with fellow physicians in discussions and in consultation not be forgotten.

6. The concept of earned status continue to be permanent while maintenance of proficiency would be a continuous function; and be it further

*Resolved*, That the President of the Kansas Medical Society appoint a committee for the purpose of conducting this study, and that the committee be instructed to report to the House of Delegates at its next Annual Meeting.

**RESOLUTION NO. 72-13****KMS Journal**

*Resolved*, That the House of Delegates of the Kansas Medical Society authorizes the placement of ads in any segment of the JOURNAL if it will enhance the financial situation of the JOURNAL.

**RESOLUTION NO. 72-14**

Not adopted.

**RESOLUTION NO. 72-15****Mr. Blake A. Williamson**

WHEREAS, Mr. Blake A. Williamson has been a friend of medicine in the State of Kansas for many years, both as a lawyer and as a legislator; and

WHEREAS, Mr. Williamson has exhibited long and notable service in the interest of the medical profession; and

WHEREAS, The Wyandotte County Medical Society elected Mr. Williamson to honorary membership in the society at the time of his retirement from legislative activity; therefore be it

*Resolved*, That the Kansas Medical Society likewise elect Mr. Blake A. Williamson to honorary membership in the Kansas Medical Society.

**RESOLUTION NO. 72-16**

*(Combined With No. 72-58)*

**Comprehensive Health Planning**

*Resolved*, That physicians on any planning council for Comprehensive Health Planning or Regional Medical Programs be appointed to committees directly subordinate to the Commission on Health Services; and be it further

*Resolved*, That the Commission for Health Services of the Kansas Medical Society be instructed to review RMP and CHP and present to the House of Delegates at an early meeting a detailed report concerning the current status of RMP and CHP as it relates to the goals and objectives at the state and regional level.

**RESOLUTION NO. 72-17****HMO—HR.11728**

*Resolved*, That the Council appoint a committee to study this proposal and bring in recommendations for Society position on HR-11728; and be it further

*Resolved*, That the Committee shall investigate and report the effectiveness of HMO's currently in operation; and be it further

*Resolved*, That the KMS bring these recommendations to the House of Representatives Committee which will consider the bill.

**RESOLUTION NO. 72-18****Conference of County Society Officers**

*Resolved*, That the Executive Committee and staff of the Kansas Medical Society be instructed to arrange a conference of county society officers for the purpose of receiving information on programs and activities of the AMA, with this conference structured similar to the Conference for Senior Medical Society Executives held in Chicago, January 27-28, 1972.

**RESOLUTION NO. 72-19****Accreditation Seminar**

*Resolved*, That the House of Delegates of the Kansas Medical Society agree that the Kansas Medical Society should be a co-sponsor for such a seminar, to be held in Kansas sometime in the summer of 1972.

**RESOLUTION NO. 72-20****AMA-ERF**

*Resolved*, That the Commission for Education ask this House to commend the doctors of Kansas and especially the Auxiliary to the Kansas Medical Society for their donations and strong support of AMA-ERF.

**RESOLUTION NO. 72-21****Constitutional Convention of AMA**

*Resolved*, That the Kansas Medical Society supports, in principle, Doctor Hall's call for changes in the Organization and Administration of the AMA; and be it further

*Resolved*, That the AMA Delegates from Kansas be instructed to carry out the intent of this resolution.

**RESOLUTION NO. 72-22****Wage and Price Controls**

*Resolved*, That the Kansas Medical Society go on record as supporting and commending the increasing activity of the AMA in representing the medical profession in this discriminatory action by the Wage



and Price Controls Commission; and be it further

*Resolved*, That action by the Kansas Medical Society be forwarded to the Wage and Price Controls Commission, other appropriate commissions, and our state and national legislators.

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### RESOLUTION NO. 72-23

#### The Legislative Committee

Not adopted. Combined with No. 72-47.

### RESOLUTION NO. 72-24

#### Membership

*Resolved*, That the by-laws be amended by adding 11.931: "A member must pay dues for the one year in which he became delinquent should he desire to renew his active membership in the future, unless he submits his letter of resignation to the Society by January 31 of that dues-paying year."

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### RESOLUTION NO. 72-25

#### Membership

*Resolved*, That the by-laws be amended by adding 11.911: "A member delinquent in the payment of his dues on April 1 of that dues-paying year shall be suspended."

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### RESOLUTION NO. 72-26

#### Address of the President-Elect

*Resolved*, That page 16, Section 5.4129, be amended by inserting the following between the first and second sentences: "The President is invited to present to the House an outline of his plans for the coming year at the time he assumes office."

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### RESOLUTION NO. 72-27

#### Address of the President

*Resolved*, That no special place on the agenda be designated as the time for a report from the President, but that it be declared the wish of the House that the President be heard at such times as he may request.

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### RESOLUTION NO. 72-28

#### A Second Annual House of Delegates Session

*Resolved*, That the By-Laws be amended on page 17 by adding a new section, 5.54, and by renumbering the present 5.54 to 5.55:

5.54 INTERIM SESSION. The House of Delegates shall meet annually, for a session of one day, on the second Sunday in November, unless the date is changed prior to October 1 by action of the Council. The place of the meeting shall be selected by the Council prior to October 1, but shall be in some city other than where the next annual session will be held.

5.541 An announcement of the interim session shall be sent to the officers, councilors, and to the secretary of each component and specialty society prior to October 1.

5.5411 The official order of business shall be:

5.5411,1 Registration and seating of delegates, Society members, and visitors.

5.5411,2 Call to order by the Speaker.

5.5411,3 Announcement of number of delegates, and the presence of an official quorum.

5.5411,4 Announcement of the appointment by the Speaker of a reference committee, or more than one if required.

5.5411,5 Introduction of resolutions previously received. It is intended that all resolutions shall be submitted to the Executive Office before November 1. Such as are received prior to November 1 will be mailed to the officers, councilors, and to secretaries of component and specialty societies in number corresponding to their delegate strength. These will be designated by a number and referred to a reference committee.

5.5411,6 It is intended that resolutions considered during the interim session shall relate principally to state or federal legislation, to business relating to state agencies or institutions, and to resolutions submitted by the Executive Committee, the Council, a commission, a specialty society, or by a component society.

5.411,7 Resolutions not received prior to November 1, or such resolutions as in the opinion of the Speaker may be delayed for action until the May meeting, can be introduced only after approval of two-thirds of those voting members present.

5.5411,8 The House is declared in recess and the chairman of the Reference Committee conducts hearings on each resolution referred to the committee.

5.5411,9 The Speaker reconvenes the House and presents for action such resolutions as the Reference Committee is ready to report. The Reference Committee will continue to meet in executive session until its work is completed.

5.5411,10 Announcements.

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### RESOLUTION NO. 72-29

#### Resolutions

*Resolved*, That the Speaker annually notify each component society in January to prepare all possible

resolutions in advance, so they may be printed in the April issue of the JOURNAL; and be it further

*Resolved*, That the President remind all delegates in his January Newsletter to the membership to have all possible resolutions prepared for publication in the April issue of the JOURNAL; and be it further

*Resolved*, That the above notwithstanding, there shall be an opportunity at the first session of each House of Delegates meeting for the introduction of resolutions not previously published.

## RESOLUTION NO. 72-30

### Reports at the First Session of the Annual Meeting of the House of Delegates

*Resolved*, That the by-laws be amended on page 15 and 16 by deleting Sections 5.4116 through 5.411,16; and be it further

*Resolved*, That the following be added:

5.4116 Report of the Constitutional Secretary shall be distributed to all persons in attendance. The Constitutional Secretary shall call attention of the House to any statistics relating to membership that are of exceptional importance.

5.4117 The report of the Treasurer, including a proposed budget for the coming year, shall be distributed to all persons present. The Treasurer shall call attention to any specific financial items that are exceptional. The House shall immediately thereafter act to approve the report of the Treasurer.

5.4118 The report of the Editor of the JOURNAL shall be prepared and distributed to all persons present.

5.4119 The Speaker of the House of Delegates may invite such persons to present written or oral reports to the House of Delegates which in his judgment will be important for information to the House.

5.411,10 The report of the Executive Director shall be prepared and distributed to all persons present.

5.411,11 Unfinished business.

5.411,12 Reports and presentation of resolutions from commissions.

5.411,13 New business and the introduction of resolutions from component societies, specialty societies, and delegates.

5.411,14 Announcements—to include: (1) members of each reference committee; (2) time and place of reference committee meetings; (3) names and districts of expiring councilor and alternate terms; (4) results of primary elections; (5) other.

5.411,15 Adjournment to reconvene at second meeting.

## RESOLUTION NO. 72-31

### The Consent Calendar

*Resolved*, That the by-laws be amended on page 17 by inserting a new section 5.4413:

5.4413 As each resolution is introduced, the Speaker shall designate it with a number and if, in his opinion, the resolution can be dismissed and acted upon within a reasonable amount of time, he shall direct the resolution to be placed on the Consent Calendar. He shall ask if there is any objection. If an objection appears, the resolution shall at that time be referred to a reference committee. If no objection appears, it will be placed before the House for discussion and action after all resolutions have been presented. The House may even at this time direct that the resolutions shall be referred to a reference committee.

## RESOLUTION NO. 72-32

### The Kansas Legislature

*Resolved*, That the physicians in each legislative district actively support candidates to the legislature from either political party who understand health problems and who support sound legislation for the health care of the people of Kansas.

## RESOLUTIONS NO. 72-33, 72-34, 72-35

### Drug Abuse

The House agreed with the intent of these resolutions but discovered technical difficulties that made their implementation impractical. Therefore, they were not adopted.

## RESOLUTION NO. 72-36

### Kansas Foundation for Medical Care

*Resolved*, That the House of Delegates adopt by-laws for the Kansas Foundation for Medical Care and authorize the corporation to become active.

## ARTICLES OF INCORPORATION OF KANSAS FOUNDATION FOR MEDICAL CARE

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, acting as incorporators of a corporation under the Kansas Non-Profit Corporation Act, and in accordance therewith, do hereby execute and acknowledge these Articles of Incorporation:

## I.

The name of the corporation is KANSAS FOUNDATION FOR MEDICAL CARE.

## II.

The period of duration of the corporation is perpetual.

## III.

The purpose or purposes for which the corporation is organized are as follows:

A. To serve as a mechanism under which participating members of the foundation may negotiate and contract with third-party purchasers of medical care.

B. To promote and develop means whereby medical services of high quality can be provided to the general public in accordance with proper medical and ethical standards.

C. To study and promote improved methods and facilities for delivery of health care.

D. To improve the public health.

E. To study and promote improvement in the means of financing health care.

F. To promote the art and science of medicine.

G. To foster medical education.

H. To disseminate information to the general public concerning medical science and health care.

I. To work with all segments of society to expedite the accomplishments of the aforementioned goals.

These segments should include medical societies, professional organizations, labor and consumer organizations, interested individuals, educational institutions and local foundations, as well as the legislative and administrative divisions of government.

J. To receive and acquire by gift, grant, purchase, devise, bequest, or otherwise, as may be lawful, money and real and personal property of any kind; and to hold, accumulate, invest, or dispose of such property or the income derived therefrom for the furtherance of the above stated purposes.

K. To do and engage in any and all lawful activities which may be incidental or reasonably necessary to any of the foregoing purposes, and to have and to exercise all other powers and authority now or hereinafter conferred upon nonprofit corporations under the laws of the State of Kansas.

## IV.

This corporation shall never be operated for the primary purpose of carrying on a trade or business for profit. No part of the income nor the assets of this corporation shall be distributed to its members, directors, or officers; provided, however, that reasonable compensation may be paid for any services rendered to the corporation, and reimbursement may be made for any expenses incurred for the corpora-

tion by any officer, director, member, agent, employee, or other person or corporation; and provided further that the corporation may make payments to or for the benefit of its members in payment for services performed by such members under health care plans promoted or administered by the corporation.

## V.

The address of the initial registered office of the corporation is 1300 Topeka Avenue, City of Topeka, County of Shawnee, Kansas 66612, and the name of its initial registered agent at such address is Oliver E. Ebel.

## VI.

The number of directors constituting the initial Board of Directors for the purpose of incorporation shall be eleven (11), and the names and addresses of the persons who are to serve as the initial directors, until the first meeting of directors after incorporation and until their successors shall be duly elected and shall qualify, are as follows:

William J. Reals, M.D., St. Joseph Hospital, Wichita, Kansas, President

Francis T. Collins, M.D., 206 Medical Arts Bldg., Topeka, Kansas, Past President

Kenneth L. Graham, M.D., Medical Arts Bldg., Leavenworth, Kansas, President-Elect

Thomas F. Taylor, M.D., 430 S. Ohio, Salina, Kansas, First Vice President

John N. Blank, M.D., 713 Wolcott Bldg., Hutchinson, Kansas, Second Vice President

Emerson D. Yoder, M.D., Denton, Kansas, Constitutional Secretary

Chester M. Lessenden, Jr., M.D., Medical Plaza Bldg., Topeka, Kansas, Treasurer

Lucien R. Pyle, M.D., 211 Medical Arts Bldg., Topeka, Kansas, AMA Delegate

John C. Mitchell, M.D., 617 United Bldg., Salina, Kansas, AMA Delegate

Clair C. Conard, M.D., P.O. Box 1000, Dodge City, Kansas, Speaker

M. Robert Knapp, M.D., 1128 S. Clifton, Wichita, Kansas, Vice Speaker

## BY-LAWS OF KANSAS FOUNDATION FOR MEDICAL CARE

We, the Directors of the above entitled corporation, under the Kansas Non-Profit Corporation Act, hereby adopt the following by-laws for the government of said corporation, the regulation of its affairs, and the carrying on of its business.

### ARTICLE I Membership

#### 1. *Classes of Membership*

There shall be two classes of membership in this



corporation, as follows: Corporate Members and Participating Members.

In addition to the members referred to above, the Board of Directors may designate other persons who may take part in the projects to be carried out under the direction or control of the corporation, under such terms and conditions as the Board of Directors may determine.

## *2. Corporate Members*

Corporate Members shall consist of: (a) those persons who are members of the House of Delegates of the Kansas Medical Society, a Kansas nonprofit corporation; (b) those other than doctors of medicine serving on the board of directors pursuant to the provisions of Article III, Sec. 2 of these by-laws. Every such person upon becoming a member of the House of Delegates of the Kansas Medical Society, if he accepts, shall become, without any further proceeding, a corporate member of this corporation. Each corporate member shall remain such only during the time that he is a duly qualified and acting member of the House of Delegates of Kansas Medical Society, and each such corporate member upon ceasing to be a member of said House of Delegates shall immediately and automatically and without notice, hearing, or affirmative action on the part of this corporation, lose and forfeit such corporate membership, and any and all rights, powers, or privileges pertaining thereto.

Upon becoming a corporate member, a physician shall not automatically become a participating member, but may apply for participating membership as hereinafter provided in Section 3 of this Article.

## *3. Participating Members*

Any physician, who is authorized by the statutes of the State of Kansas to practice medicine in the State of Kansas and who is eligible for membership in the Kansas Medical Society or the Kansas State Osteopathic Association, shall be eligible to apply for election as a participating member in this corporation; provided, however, that the Board of Directors of this corporation shall have the right to refuse such application for membership, if in their sole discretion they find that such physician shall not be of good moral character, or in any other way be not qualified to practice medicine, or to have been guilty of unprofessional conduct, or of conduct unbecoming a person licensed to practice medicine and surgery, or of conduct detrimental to the best interests of the public.

## *4. Selection and Removal of Participating Members*

Any physician (whether a corporate member or other physician) who desires to become a participat-

ing member of this corporation shall complete and file such application for that purpose as may be required by the Board of Directors. Such application shall contain a provision whereby the applicant agrees to be bound by the by-laws of the corporation and such rules and regulations as may be adopted by the corporation, and agrees to be bound by the principles of medical ethics, as interpreted by the American Medical Association and the Kansas Medical Society.

The Board of Directors shall be authorized to adopt such rules and regulations as it may deem reasonable for the processing of applications for participating membership.

## *5. Rights, Privileges and Obligations of Participating Members*

The Board of Directors may adopt such rules and regulations as it may deem proper, not inconsistent with these by-laws, governing the rights, privileges and obligations of participating members.

The privilege of being heard at the meetings of the corporate members and at the meetings of the Board of Directors shall be granted to participating members, subject to such limitations as the corporate members or the Board of Directors respectively may determine.

Participating members shall have the privilege of holding any office in the corporation and the privilege of membership on any committee.

## *6. Dues and Assessments*

Dues and assessments, if any, to be charged to or imposed upon the corporate or participating members of the corporation, or other persons who may take part in any project of the corporation, shall be determined by the Board of Directors.

## *7. Voting Rights*

The right to vote shall be held by corporate members only, except as listed in paragraph 4 below, and such corporate members shall be entitled to one vote on all propositions submitted to the members.

The Board of Directors, however, may seek the advice of the participating members by submitting such questions concerning the projects of the corporation as it may deem proper to a vote of the participating members.

Cumulative voting and voting by proxy shall not be permitted, except that a duly elected alternate, serving in the capacity of a delegate, may vote as a corporate member.

Participating members shall have the right to vote on the adoption of any health care standards used for peer review or any uniform, average, or median fee schedules for medical services by the foundation. Adoption of such schedules shall be by a ma-

majority of those participating members present and voting.

#### 8. *Interest in Property*

None of the members of this corporation shall ever have any right to or interest in any of the property, real or personal of any kind or description, which is now or may in the future be owned and controlled by the corporation.

### ARTICLE II

#### Meetings of the Corporate Members

##### 1. *Annual Meetings*

The annual meeting of corporate members of this corporation shall be held on the first day of the Annual Session of the Kansas Medical Society.

##### 2. *Special Meetings*

A special meeting of the corporate members of this corporation may be called at any time by the president, the Board of Directors, or by not less than one-third of such corporate members.

##### 3. *Place of Meeting*

Each annual meeting of the corporate members of the corporation shall be held at the same place designated as the place of meeting for the annual session for such year of the Kansas Medical Society. The Board of Directors may designate any place, either within or without the state of Kansas, as a place of meeting for any special meeting called by the Board of Directors. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the registered office of the corporation in the State of Kansas.

##### 4. *Notice of Meeting*

Written notice stating the place, day, and hour of any meeting of corporate members shall be delivered either personally or by mail to each corporate member not less than ten (10) or more than fifty (50) days before the date of such meeting, by or at the direction of the president, or the secretary, or the officers or persons calling the meeting. In case of a special meeting, the purpose or purposes for which the meeting is called shall be stated in the notice. If mailed, the notice of meeting shall be deemed to be delivered when deposited in the United States mail addressed to such corporate member at his address as it appears on the records of the corporation, with postage thereon prepaid.

##### 5. *Informal Action by Corporate Members*

Any action required by law to be taken at a meeting of the corporate members, or any action which may be taken at a meeting of such members, may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by

all of such members entitled to vote with respect to the subject matter thereof.

#### 6. *Quorum*

Two-thirds of the corporate members shall constitute a quorum at any such meeting. If a quorum is not present at the meeting, a majority of the corporate members present may adjourn the meeting from time to time without further notice.

#### 7. *Voting*

A majority of the corporate members present and voting at a meeting at which a quorum is present shall be necessary for the adoption of any matter to be voted upon by such members, unless a greater percentage is required by law or by these by-laws.

### ARTICLE III

#### Board of Directors

##### 1. *General Powers*

The affairs of this corporation shall be managed by its Board of Directors.

##### 2. *Number, Tenure and Qualifications*

The number of directors shall be twenty-nine (29), including the president of the Kansas Medical Society as ex-officio member, and the president of the corporation, who shall serve ex-officio with the right to vote. Initially, Districts 1 through 6 will each elect one director for a period of three (3) years; Districts 7 through 12 will each elect one director for a period of two (2) years; District 13 through 18 will each elect a director for a period of one (1) year. Thereafter, each district will elect a director for a period of three (3) years as their terms expire. The Kansas State Osteopathic Association shall elect three (3) of their members licensed to practice medicine and surgery to serve on the Board of Directors. Initially, one shall be elected to serve a three-year term, one to serve a two-year term, and one to serve a one-year term, and thereafter each person so elected shall be elected to a three-year term. The Board of Directors shall elect six (6) members at large—initially two for 1 year, two for 2 years and two for 3 years, thereafter successors shall be elected for a term of 3 years.

Each district member of the board shall be a participating physician and will be elected by the physician members of the respective Council District.

The elections of the medical society district directors will take place at the annual meeting of the corporation. Each director shall serve until his term expires or until his successor shall have been duly elected and qualified.



### 3. *Regular Meetings*

The regular annual meeting of the Board of Directors shall be held without other notice than this by-law, immediately after and at the same place as the annual meeting of the corporate members of the corporation. The Board of Directors may provide by resolution the time and place, either within or without the state of Kansas, for the holding of additional regular meetings of the board without other notices than such resolution.

### 4. *Special Meetings*

Special meetings of the Board of Directors may be called by or at the request of the president or any two directors. The person or persons authorized to call special meetings of the board may fix any place, either within or without the state of Kansas, as the place for holding any such special meeting of the board called by them.

### 5. *Notice*

Notice of any special meetings of the Board of Directors shall be given at least ten days previously thereto by written notice delivered personally or sent by mail or telegram to each director at his address as shown by the records of the corporation. The purpose of the special meeting shall be stated in the notice of such meeting. If mailed, such notice shall be deemed to be delivered when deposited in the United States mail in a sealed envelope so addressed, with postage thereon prepaid. If notice be given by telegram, such notice shall be deemed to be delivered when the telegram is delivered to the telegraph company. The attendance of a director at any meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at nor the purpose of any regular or special meeting of the board need be specified in the notice or waiver of notice of such meeting, unless specifically required by law or by these by-laws.

### 6. *Quorum*

A majority of the Board of Directors shall constitute a quorum for the transaction of business at any meeting of the board; but if less than a majority of the directors are present at said meeting, a majority of the directors present may adjourn the meeting from time to time without further notice.

### 7. *Voting*

The act of a majority of the directors present and voting at a meeting at which a quorum is present shall be the act of the Board of Directors, unless the act of a greater number is required by law or by these by-laws.

### 8. *Vacancies*

Any vacancy occurring in the Board of Directors shall be filled by election from the original electing body of that director. A director elected to fill a vacancy shall be elected for the unexpired term of his predecessor in office.

### 9. *Compensation*

Directors as such shall not receive any stated salaries for their services, but by resolution of the Board of Directors reasonable compensation and expenses of attendance, if any, may be allowed for attendance at regular or special meetings of the board; but nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity and receiving compensation therefor.

### 10. *Informal Action by Director*

Any action required by law to be taken at a meeting of directors, or any action which may be taken at a meeting of directors, may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by all of the directors.

### 11. *Removal of Directors*

Any director may be removed from office as such by the affirmative vote of two-thirds of the members, at any annual or special meeting of the members, on written notice setting forth the reasons and grounds therefor, mailed to such director at his last known address at least ten (10) days prior to the date of such meeting.

## ARTICLE IV Officers

### 1. *Officers*

The officers of the corporation shall be a president, a vice-president, a secretary, and a treasurer, elected by the Board of Directors from the current membership of the board.

One or more project directors may be appointed in accordance with the provisions of this article.

Only members of the Board of Directors who are participating members of this corporation shall be eligible for election to any office of this corporation.

The Board of Directors may elect or appoint such other officers, including one or more assistant secretaries, and one or more assistant treasurers, as it shall deem desirable, such officers to have the authority and perform the duties prescribed from time to time by the Board of Directors.

### 2. *Election and Term of Office*

The officers of the corporation shall be elected annually by the Board of Directors at the regular annual meeting of the Board of Directors. If the



election of officers shall not be held at such meeting, such election shall be held as soon thereafter as conveniently may be. New offices may be created and filled at any meeting of the Board of Directors. Each officer shall hold office until his successor shall have been duly elected and qualified.

### 3. *Removal*

Any officer elected or appointed by the Board of Directors may be removed at any time, with or without cause, by the Board of Directors whenever in its judgment the best interests of the corporation would be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the officer so removed.

### 4. *Vacancies*

Any vacancy in any office because of death, resignation, removal disqualification, or otherwise may be filled by the Board of Directors for the unexpired portion of the term.

### 5. *President*

The president shall be the executive head of the corporation, and shall have general supervision over the business and affairs of the corporation. He shall preside at all meetings of the members and of the Board of Directors.

### 6. *Vice President*

In the absence of the president or in the event of his inability or refusal to act, the vice president shall perform the duties of the president, and when so acting shall have all powers of and be subject to all the restrictions upon the president. The vice president shall perform such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

### 7. *Treasurer*

If required by the Board of Directors, the treasurer shall give a bond for the faithful discharge of his duties in such sum and with such surety or sureties as the Board of Directors shall determine. He shall have charge and custody of and be responsible for all funds and securities of the corporation; receive and give receipts for moneys due and payable to the corporation from any source whatsoever, and deposit all such moneys in the name of the corporation in such banks, trust companies, or other depositories as shall be selected in accordance with the provisions of these by-laws; and in general perform all the duties incident to the office of treasurer and such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

### 8. *Secretary*

The secretary shall keep the minutes of the meetings of the members and of the Board of Directors

in one or more books provided for that purpose; see that all notices are duly given in accordance with the provisions of these by-laws or as required by law; be custodian of the corporate records and of the seal of the corporation and see that the seal of the corporation is affixed to all documents, the execution of which on behalf of the corporation under its seal is duly authorized in accordance with the provisions of these by-laws; keep a register of the post office address of each member which shall be furnished to the secretary by such member; and in general perform all duties incident to the office of secretary and such other duties as from time to time may be assigned to him by the president or by the Board of Directors.

### 9. *Executive Director*

The office of executive director shall be filled by the person who holds the office of executive director of the Kansas Medical Society. Subject to the control of the president and of the Board of Directors, he shall in general supervise and administer the business and affairs of the corporation. Assistants to the executive director may be selected by the Board of Directors as is deemed necessary to further the activities of the foundation.

### 10. *Project Director*

Any project director shall serve under the general supervision and direction of the executive director. He shall supervise the administration of such projects as may be assigned to him, and shall perform such other duties as may be delegated to him by the Board of Directors, the president, or the executive director.

### 11. *Assistant Treasurers and Assistant Secretaries*

If required by the Board of Directors, the assistant treasurers shall give bonds for the faithful discharge of their duties in such sums and with such sureties as the Board of Directors shall determine. The assistant treasurers and assistant secretaries in general shall perform such duties as shall be assigned to them by the treasurer, or the secretary, or by the president, or the Board of Directors.

## ARTICLE V Committees

### 1. *Committees of Directors*

There shall be an Executive Committee, which shall include the president, and such other officers or members of the Board of Directors as may be designated by the Board of Directors. The Board of Directors may delegate to such Executive Committee any of the powers of the Board of Directors when the Board of Directors is not in session, provided, however, that such delegation of authority to the Ex-

ecutive Committee shall not operate to relieve the Board of Directors, or any individual director, of any responsibility imposed upon it or him by law.

## 2. *Other Committees*

Other committees not having and exercising the authority of the Board of Directors in the management of the corporation may be appointed in any such manner as may be designated by a resolution adopted by a majority of the directors present at a meeting at which a quorum is present. Unless otherwise provided in such resolution, members of such committees may be persons who are not members of the Board of Directors.

## 3. *Term of Office*

The tenure of members of such committees shall be as provided by the Board of Directors in the resolution creating such committee.

## 4. *Quorum*

Unless otherwise provided in the resolution of the Board of Directors designating a committee, a majority of the whole committee shall constitute a quorum, and the act of a majority of the numbers present at a meeting at which a quorum is present shall be the act of the committee.

## 5. *Rules*

Each committee may adopt rules for its own government not inconsistent with these by-laws, or with rules adopted by the Board of Directors.

# ARTICLE VI

## Execution of Instruments

### 1. *Execution of Instruments*

The president shall have power to execute on behalf and in the name of the corporation any deed, contract, bond, debenture, note, or other obligations or evidences of indebtedness, or proxy, or other instrument requiring the signature of an officer of the corporation, except where the signing and execution thereof shall be expressly delegated by the Board of Directors to some other officer or agent of the corporation. Unless so authorized, no other officer, agent or employee shall have any power or authority to bind the corporation in any way, to pledge its credit, or to render it liable pecuniarily for any purpose or in any amount.

### 2. *Checks and Endorsements*

All checks and drafts upon the funds to the credit of the corporation in any of its depositories shall be signed by such of its officers or agents as shall from time to time be determined by resolution of the Board of Directors, which may provide for the use of facsimile signatures under specified conditions, and

all notes, bills receivable, trade acceptances, drafts, and other evidences of indebtedness payable to the corporation shall, for the purpose of deposit, discount or collection, be endorsed by such officers or agents of the corporation, or in such manner as shall from time to time be determined by resolution of the Board of Directors. In the absence of such determination by the Board of Directors such instruments shall be signed by the treasurer, or an assistant treasurer, and countersigned by the president, or a vice president of the corporation.

### 3. *Deposits*

All funds of the corporation shall be deposited from time to time to the credit of the corporation in such banks, trust companies, or other depositories as the Board of Directors may select.

### 4. *Gifts*

The Board of Directors may accept on behalf of the corporation any contribution, gift, bequest, or devise for the general purposes or for any special purpose of the corporation.

# ARTICLE VII

## Books and Records

The corporation shall keep correct and complete books and records of account and shall also keep minutes of the proceedings of its members, Board of Directors, and committees having any of the authority of the Board of Directors, and shall keep at its registered or principal office a record giving the names and addresses of the members entitled to vote. All books and records of the corporation may be inspected by any member for any proper purpose at any reasonable time.

There shall be conducted an annual CPA audit just prior to and made available at the next Annual Meeting of the corporation.

# ARTICLE VIII

## Fiscal Year

The fiscal year of the corporation shall begin on the first day of ..... and end on the last day of ..... in each year.

# ARTICLE IX

## Corporate Seal

The corporate seal shall be in such form as shall be approved by resolution of the Board of Directors. Said seal may be used by causing it or a facsimile thereof to be impressed, or affixed, or reproduced, or otherwise. The impression of the seal may be made and attested by either the secretary or an assistant secretary for the authentication of contracts or other papers requiring the seal.

**ARTICLE X****Waiver of Notice**

Whenever any notice is required to be given to any member or director of this corporation under the provisions of the Kansas Non-Profit Corporation Act, or under the provisions of the Articles of Incorporation, or by the by-laws of the corporation, a waiver thereof in writing signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice.

**ARTICLE XI****Amendments to the By-laws**

These by-laws may be amended at any annual meeting of the corporate members, or at any special meeting of the corporate members called for that purpose. These by-laws may also be amended by the Board of Directors, by a vote of two-thirds of the total number of such directors, subject to the approval of the corporate membership. The corporate members shall have the right to amend or repeal any by-law change made by the Board of Directors.

**ARTICLE XII****Disciplinary Action**

A member of this corporation who is guilty of a criminal offense or gross misconduct, either as a physician or as a citizen, or violates any of the provisions of the Principles of Medical Ethics of the American Medical Association, or any Principles of Professional Conduct of the Kansas Medical Society, or any principles of conduct adopted by this corporation, or who willfully or repeatedly violates any of the professional economic or health care standards adopted by this corporation, or who acts contrary to or in violation of any contracts, agreements, or statements of principle of this corporation, shall be liable to censure, suspension, or expulsion. The procedure to be followed by this corporation with respect to censure, suspension, or expulsion of a member shall be the procedure now or hereafter contained or provided in the by-laws of the appropriate professional association.

**RESOLUTION NO. 72-37****Peer Review Guidelines**

*Resolved*, That the House of Delegates establish guidelines for the operation of a peer review program in Kansas, and that they be presented to the Foundation.

**PEER REVIEW GUIDELINES****Definition of Terms**

The following terms, when used in the body of

these suggested guidelines, are to be interpreted according to the definitions that follow.

1. *Claims Review*: A review of individual charges submitted for payment.

2. *Utilization Review*: A study of the frequency of charges or services to determine patterns of service of charges.

3. *Medical Audit*: An analysis, or audit, of the medical care given a patient or patients at a particular time in a particular setting, implying a retrospective review of records to determine if the essentials of care are documented. This mechanism at times may include a value judgment as to the quality of care given.

4. *Peer*: An active practicing physician reviewing another active practicing physician of like training, experience and present status.

5. *Peer Review*: A review of the quality of care provided a patient including documentation of care (medical audit), diagnostic steps used, conclusions reached, therapy given, appropriateness of utilization (utilization review), and reasonableness of charges (claims review). Peer Review is synonymous with quality.

6. *Practicing Physicians*: Those physicians who are actually seeing and treating patients.

7. *Usual, Customary, Reasonable*:

*Usual*: The "usual" fee which is charged for a given service by an individual physician in his personal practice.

*Customary*: That range of usual fees charged by physicians of similar training and experience for the same service within a given specific limited geographic or socio-economic area.

*Reasonable*: A fee which meets the above two criteria, or, in the opinion of the responsible local medical association's review committee, is justifiable in the special circumstances of the particular case in question.

**I. Preamble**

Peer Review evaluates the quality and the quantity of an individual physician's professional service, including ambulatory or out-of-institution service, comparing this with that provided by other practicing physicians in the area. Peer Review should have educational value for the physician to assist him in his effort to provide care of the highest quality. It also should serve to educate the public to improve their understanding for the value of services and their true cost. Peer Review should be conducted by practicing physicians in their own geographic area with consultation as hereafter described.



It should further serve to establish public confidence in the fact that the medical profession wants the patient to receive the optimum amount of care needed for his condition, and to maintain high quality, regardless of who assumes responsibility for payment.

## II. Purpose

Peer Review Committees may review specific cases brought before them by physicians, patients, institutions, prepayment carriers, insurance carriers, government agencies, or other responsible sources.

The committees will provide recommendations and advice, or attempt to resolve disputes by arbitration. Their objective will be to maintain high quality of care, aid in the control of the cost of medical care, and to keep utilization of services and facilities consistent with accepted standards of practice.

## III. Organization and Function

*A. State Peer Review Committee.* The Kansas Medical Society will establish a state peer review committee consisting of physicians representing the approved specialty societies. The function of the state peer review committee shall include at least the following:

1. The development of recommended guidelines for the use of district review committees.
2. To encourage district peer review committees to conduct their activities in accordance with the suggested guidelines.
3. Encourage approved specialty societies to form peer review advisory committees from whom peer review committees may receive expert opinion as requested.
4. To distribute information to the district committees concerning peer review activity as may be of assistance to them in the performance of their task.
5. To review and act upon cases which may be submitted by district peer review committees or those submitted through the appeal process.
6. Periodically report through the proper commission to the Council and to the House of Delegates upon the work being conducted by the district and the state peer review committee.

*B. District Peer Review Committees.* The Councilor is responsible for the formation of a peer review committee within his district. It should consist of representatives selected by the component societies within the Council District. The committee should have access to counsel from the specialty societies, which have authorized representation in the House of Delegates.

The District Peer Review Committee will establish close cooperation with the grievance committees of

the component societies within the Council District and such other committees as may be appropriate. Representatives of these committees may also be members of the Peer Review Committee.

## IV. Scope of Peer Review (State and District)

A. To assure high standard of professional care.

B. To review records and other pertinent information for the purpose of recommending appropriate action.

C. To review and evaluate practice patterns so that specific educational activities can be instituted to modify such patterns when they appear inadequate.

D. To promptly refer to the component medical society for whatever action such society considers appropriate evidence of unwillingness on the part of a physician to accept recommendations made by the Peer Review Committee.

E. To cooperate with the component societies in an effort to inform the public regarding the existence and purpose of peer review committees.

## V. Review Procedure (State and District)

*A. Conditions Prerequisite for Review.*

1. Sufficient evidence to indicate an attempt was made to settle the dispute directly with all parties involved. Cases in litigation will not be considered.

2. Usual, customary, and reasonable fees will be used as a guideline in cases involving fee disputes.

3. The committee will review cases only after it has received such information as it considers necessary. The committee may request additional information or conduct its own preliminary investigation before accepting the case for review. The committee may develop such forms as are considered necessary to obtain needed information.

4. To adopt procedures and policies, with appropriate records to process complaints and to notify complainants about disposition of their cases.

*B. Review Process.*

The operation of the Peer Review Committee can be effective only if its decisions are honored by organizations and individuals who request the committee's services.

1. Upon reviewing a properly documented case, the chairman should promptly notify all interested parties that the case is scheduled for hearing. If appropriate, the interested parties may be invited to attend the hearing.

2. The committee should attempt to reach a decision on all cases within ninety (90) days. If the District Committee cannot reach a decision or does not desire to hear the case, it has the obliga-

tion of referring the case to the State Peer Review Committee. All interested parties should be promptly notified of decisions reached.

3. The right of appeal is inherent to any decision of local or district peer review.

4. In the event of an appealed decision, the District Chairman should immediately submit the case to the State Peer Review Committee together with all appropriate documentation.

## VI. Disciplinary Jurisdiction

The Peer Review Committee is not a disciplinary body. It does, however, have an obligation to report its findings and make recommendations to other appropriate county, district, or state committees requesting the latter take action when warranted by the circumstances. The final decision and action rests with the Council of the Kansas Medical Society.

## VII. Responsibility of Peer Review Committees (State and District)

*A. State Peer Review Committee:* Those defined under III.A.

*B. District Peer Review Committee:*

1. Perform services delineated in Section IV.
2. Avoid interference with established hospital or ECF peer review committees, but work in close harmony with them.
3. May assume the responsibility for utilization review in addition to peer review if requested to do so by the medical staff of the institution involved.

*C. Composition and Tenure of the Committee:*

1. The committee should consist of a chairman and at least two (2) or more members and be broadly representative of the medical community.
2. Where possible, terms of service should be staggered to insure continuity.

*D. Committee Availability:* The committee should accept referrals from all sources such as the patient, physician, prepayment groups, insurance carriers, and governmental agencies.

*E. Public Information:* Committees should keep their component medical societies regularly informed of their activities. The component societies will be responsible for dissemination of this information to their members and to the public.

*F. Priorities:*

1. Peer Review of quality of practice: a. professional competency, b. under-utilization, c. over-utilization.
2. Unusual charges.
3. Suspected fraudulent claims (the committee will generally submit the information to the component society for action).

*G. Liaison With Other Agencies:* The Peer Review Committee may invite the involved parties. At

its discretion, the committee may request consultation with other informed sources.

*H. Right of Appeal Mechanism:* It is the Peer Review Committee's responsibility to obtain the facts and make recommendations based upon the findings. In the event of disagreement, appeals are available according to local district guidelines. Refer to III.A. 5; V.3; and VI.

*I. Records:* The committee should adopt formal written procedures and policies with special forms to record and process complaints and to notify the parties concerned about the disposition of their cases. Refer to V.A.3 and V.A.4.

*J. Liaison With Hospitals:* Close cooperation with the chairman of appropriate hospital medical staff committees is essential.

*K. Financing:* Financing of the committees' work and establishing charges for their efforts should be locally arranged. Assessing charges against the patient or the physician would establish an unfair financial burden. However, insurance carriers, governmental agencies, and other individuals or agencies requesting an unusual amount of investigation and review should be expected to pay a reasonable fee for services rendered.

## VIII. Revisions

It is recognized this document will require occasional revision. The Commission for Sociology and Economics is responsible for periodic revisions.

## RESOLUTION NO. 72-38

### Doctors for Kansas

*Resolved,* That the Kansas Medical Society develop imaginative projects that may attract physicians to practice in Kansas and give practical assistance to new physicians to make their professional beginning easier and more pleasant; and be it further

*Resolved,* That the Society, in addition to whatever else might be accomplished, immediately develop procedures whereby:

1. Every prospective Kansas medical student be afforded advice and guidance beginning prior to his entrance to the medical school and actively continuing for the duration of his professional education. This might well be performed by physicians themselves, or by understanding school guidance counselors, who would not only encourage the student's selection of medicine as a career but would assist him in his entry to the medical school, follow his scholastic and personal progress, and encourage him to practice in Kansas.

2. The component society of the area where a new physician locates would assist him professionally and his family socially to be quickly made to



feel at home. Acquainting the new physician with health laws and practice requirements, introducing him to referral opportunities, advising him of charging practices, assisting him in locating and equipping his office are but a few of the professional services the Society should develop. To make the family welcome, the opportunities are endless.

3. Internship and residency opportunities within Kansas, especially in the field of family practice, are expanded. The Residency Review Committee for Family Practice presently approves three months study for each resident in a community other than the primary residency location. Kansas once more has the opportunity to demonstrate to the nation on a pilot basis deviations of this plan if the Society can establish sound residency teaching in numerous Kansas communities. Unless this is quickly accomplished, the potential of what has preceded, to provide all Kansas with adequate medical care, will not be fully realized. And be it further

*Resolved*, That a committee under the Commission for Education be directed to implement the intent of this resolution with the practical application of whatever projects may encourage young people of Kansas to select medicine as a career, and to remain in this state to practice; and be it further

*Resolved*, That this committee be empowered to recruit assistance from individuals and organizations outside the Society for making the project effective, and within the Society, in presentations to the medical students of the University of Kansas School of Medicine as authorized by the school.

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#### RESOLUTION NO. 72-39

##### Journal Subscription Rate

*Resolved*, That the annual subscription rate of \$4.00 be increased to \$10.00.

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#### RESOLUTION NO. 72-40

##### Lieutenant General Alonzo A. Towner

WHEREAS, General Towner is Surgeon General of the United States Air Force; and

WHEREAS, General Towner came to Kansas at the age of three, attended the public schools of Wichita and graduated from Wichita State University; and

WHEREAS, He obtained his medical education at the University of Kansas School of Medicine; and

WHEREAS, A portion of his military career was served in this state and nearby, he graduated from the Command and General Staff School, Fort Leavenworth, was Commander of the Smoky Hill Army Air Field Hospital and for a time was Surgeon of

the Strategic Air Command, Nebraska; and

WHEREAS, His is a distinguished medical career; and

WHEREAS, He has many friends and acquaintances among physicians in this state; therefore be it

*Resolved*, That Lieutenant General Alonzo A. Towner, Surgeon General of the United States Air Force, be declared an Honorary member of the Kansas Medical Society.

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#### RESOLUTION NO. 72-41

##### Specialty Societies

*Resolved*, That the Kansas Medical Society invites each of the 14 specialty organizations to explore ways in which their specialized interests and those of medicine as a profession can be even more closely unified, especially in areas of socio-economics and legislation, and to report their suggestions to the Kansas Medical Society; and be it further

*Resolved*, That the Kansas Medical Society offers to each of the 14 specialty societies assistance in mailings, arranging meetings, and such other staff work as may reasonably be accomplished.

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#### RESOLUTION NO. 72-42

##### Dual Offices

*Resolved*, That the By-Laws be amended in section 6.1 by adding after the period the following: "No member shall hold two elected offices in this Society at one time excepting delegates and alternate delegates to the American Medical Association.

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#### RESOLUTION NO. 72-43

##### Smallpox Vaccination for School Children

*Resolved*, That the Kansas Medical Society, in conformity with national trends, seek repeal of the law or any directive requiring smallpox vaccination of school age children.

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#### RESOLUTION NO. 72-44

##### Malpractice Insurance

*Resolved*, That the Kansas Medical Society Committee on Malpractice study the malpractice problems in Kansas and the feasibility of the Kansas Medical Society adopting a single Society malpractice insurance plan, and report their findings back through the appropriate commission to the Kansas Medical Society House of Delegates in 1973.



**RESOLUTION NO. 72-45****Poison Prevention**

*Resolved*, That all prescribed medications be labeled unless specified otherwise by the attending physician; and be it further

*Resolved*, That the above resolution be referred to the Legislative Committee of the Kansas Medical Society for action and distribution to the Kansas Pharmaceutical Association, the Kansas Board of Health, and others deemed appropriate.

**RESOLUTION NO. 72-46****The Healing Arts Act**

*Resolved*, That the Council study the need for amendments to the Healing Arts Act and prepare such recommendations to the Legislature as may improve the Board's capability of licensing additional qualified doctors of medicine.

**RESOLUTION NO. 72-47**

*(Combined With No. 72-23)*

**Legislative Committee**

*Resolved*, That the Legislative Executive Committee shall consist of:

1. Chairman, appointed by the Executive Committee of the Kansas Medical Society, and
2. Two to four members selected by the Chairman of the Executive Committee of the Kansas Medical Society; and be it further

*Resolved*, That the Steering Committee shall consist of:

1. Chairmen of the Legislative Committees of the component medical societies, particularly Flint Hills, Johnson, Reno, Riley, Saline, Sedgwick, Shawnee, and Wyandotte, and a representative of the Woman's Auxiliary of the KMS, and a member of the Kansas Academy of Family Practice, and
2. Non-voting members—the Executive Secretaries of the above component medical societies and the Executive Secretary of the Kansas Academy of Family Practice.

The members of this committee to be encouraged to enter into all discussions and to actively participate in the formation of decisions; and be it further

*Resolved*, That the Councilors from all 18 Council districts shall be voting members of the steering committee; and be it further

*Resolved*, That it be the intent of the House of Delegates to encourage innovations and flexibility in all committee functions. However, any precise change

in direction is to be brought back to the House for discussion and guidance.

**RESOLUTION NO. 72-48****Disability Income Coverage**

*Resolved*, That the House of Delegates dissolves commitments to the C. Ray Tyler Agency of Wichita.

**RESOLUTION NO. 72-49****Cervicouterine Cytology Project**

*Resolved*, That the Kansas Medical Society

1. Reaffirms its support for cytologic screening in the early detection of cervicouterine cancer,

2. Encourages each of its members to use available methods for this purpose in his practice, and

3. Offers approval, cooperation, and professional guidance to the Kansas Division, Inc., American Cancer Society in its four-year (1972-1976) Kansas "Uterine Cancer Detection Project" intended to

a) encourage all women in Kansas to whom the procedure is applicable to seek a cervicouterine cancer detection examination including cytologic study,

b) assist physicians and health agencies in Kansas toward making such services accessible and available in an ethical and professionally acceptable manner.

**RESOLUTION NO. 72-50****Breast Cancer Detection/Demonstration Project at KUMC**

*Resolved*, That the Kansas Medical Society

1. Endorses the concept of a Breast Cancer Detection/Demonstration Project at KUMC and commends the American Cancer Society for its funding of the project.

2. Encourages its members to cooperate with Dr. Humphrey in the conduct of this project for the benefit of all women in Kansas.

**RESOLUTION NO. 72-51****Radiology Services in the Peer Review Screens**

*Resolved*, That:

1. Language shall be inserted in the final draft document which unequivocally recognizes radiology as the personal medical service of a physician on behalf of a specific individual patient in every instance.

2. A qualified specialist in radiology shall be appointed to any committee with authority to study, develop or modify so-called peer review "screening" mechanisms under the sponsorship of the Kansas Medical Society or related bodies, such as a medical service foundation.

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### RESOLUTION NO. 72-52

#### American Board of Nuclear Medicine

*Resolved*, That the Kansas Medical Society petitions the House of Delegates of the American Medical Association to recognize that the American Board of Radiology and the American Board of Pathology offer examination in the fields of nuclear radiology and radioisotopic pathology to candidates who are appropriately trained and that those who pass examinations in these fields of radiology and pathology are capable within their fields and should be so recognized by insurers, agencies of government, hospitals and members of the medical profession.

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### RESOLUTION NO. 72-53

#### Fee for Collecting AMA Dues

*Resolved*, That Resolution No. 71-2 is hereby rescinded.

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### RESOLUTION NO. 72-54

#### Service Memberships

Filed.

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### RESOLUTION NO. 72-55

#### Woman's Auxiliary

*Resolved*, That the Kansas Medical Society furnish the necessary financial support to get the health careers bus on the road.

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### RESOLUTION NO. 72-56

#### Board of Healing Arts Quarterly Examinations

Filed.

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### RESOLUTION NO. 72-57

#### Board of Healing Arts

Filed.

### RESOLUTION NO. 72-58

#### Comprehensive Health Planning

Combined with No. 72-16.

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### RESOLUTION NO. 72-59

#### Certificate of Need

*Resolved*, That the Kansas Medical Society advise the state legislators of the seriousness of this law as to its threat to our free enterprise system, and request a reconsideration of HB-2094.

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### RESOLUTION NO. 72-60

#### Malpractice

Combined with No. 72-10.

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### RESOLUTION NO. 72-61

#### Relative Value Schedule

Not adopted.

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### RESOLUTION NO. 72-62

#### Sherman Anti-Trust Act

*Resolved*, That the President appoint a committee of five (5) to seven (7) members with Dr. John N. Blank as Chairman, to meet with Dr. Bill Roy regarding third-party payments, and report to the House of Delegates in November.

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### RESOLUTION NO. 72-63

#### Thanks to Saline County Medical Society

WHEREAS, The Saline County Medical Society has again demonstrated exceptional talent for planning and hosting the 1972 Annual Meeting of the Kansas Medical Society, therefore be it

*Resolved*, That the Kansas Medical Society formally commend the Saline County Medical Society for a job well done.

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#### Report of the Coordinator of Medical Services

Having, as of April 1, completed my first year as Coordinator of Medical Services with the Division of Medical Services of the Kansas State Department of Social Welfare, I am pleased to have this opportunity to report to the House of Delegates, and thus to the Medical Society.

This year, to say the least, has been a busy year, especially so after learning some of the duties and responsibilities of this office. I consider my job as one with considerable responsibility in the field of communication with members of the Society, and in coordination of services of medical providers. I have written many letters and made many phone calls concerning patients, medical services, hospitalization, durable equipment, and am happy to report, in most all instances, the best of cooperation from physicians and other providers. Reviewing these requests is something I am sure each of you would approve, and is an effort in providing needed services, and at the same time excluding some of the requests which might be classified as luxuries or just not medically necessary.

For a successful program we must have the cooperation of physicians, and the degree of success relates directly proportional to the efforts and cooperation of physicians.

To refresh your memory, the 1970 Legislature appropriated a total of \$43.5 million for medical services for the 1971 fiscal year. This was done with a projected case load and a total expenditure of \$35.6 million. The difference was shifted to the assistance category.

For the 1972 fiscal year, \$43.5 million was again available; however, with a carryover of \$7.8 million in medical bills for the prior year a supplemental appropriation was necessary. With the supplemental appropriation, there will be \$53 million available in fiscal year 1972.

For fiscal year 1973, \$46.6 million will be available. Considering the back bills paid in the 1972 fiscal year, this amount is about \$400,000 more than the 1972 fiscal year. This, coupled with a stable or declining case load, should be sufficient.

Throughout the year much effort was made to conserve funds. One effort which directly affects physicians was the payment on the 50th percentile. The 50th percentile computation was used since by this method the man with the smaller fee schedule, and some in high welfare areas, would be affected least. We experienced some opposition to this effort, but on the whole, I think, it was fairly well accepted.

Reduction in fees, drugs, dental services, and durable goods did help in making the appropriation extend through the year—something like \$1.5 million in a \$53 million program.

The dentists did an almost voluntary reduction of services for a time and cooperated in an unusual effort to conserve funds. Many of the dental services are now being put back into the program.

Efforts to reduce hospitalization costs met with great opposition and an injunction was filed against the Welfare Department. Utilization Review has be-

come a way of life, and is an accepted method of cost control. Another revised effort in the control of hospital costs is now being considered. Hospitals have viewed these efforts with alarm, since this will, if effective, reduce welfare expenditures to hospitals, but no effort is being made to deprive anyone of necessary services. Just what effect these efforts have made is difficult to assess, but this has made physicians and hospitals aware of the need to reduce expenditures, and I am sure has had some impact in this area.

There are other active measures in efforts to control costs. Medical Audits is taking a hard look at some practices in the area of pharmacy and drugs, and some corrective measures have been and are being implemented. Recipient overuse and abuse of hospital services, drug overuse and abuse, and the so-called "doctor shoppers" are getting some attention. Some recipients are being asked to make a selection of one physician and one pharmacy, so as to help control some of these abuses. Changes and consultations are approved after a review of the request. Let me make a suggestion here. Some member of the Kansas Pharmaceutical Association should be making a report to this body today. I suggest that this be part of the business of next year's meeting.

Requests for durable goods and semi-durable goods are being reviewed and approved on the criteria of medical necessity in treatment or rehabilitation. When a proper request is made, and made in a professional manner, setting out the medical need by pertinent medical information, we are not difficult. But when requests come in for hundreds of dollars of expenditures on a scratch pad in unreadable script, this is not acceptable. Patients give consent for the release of medical information when they present their card for services.

Another point that physicians should remember is to use veterans' benefits whenever possible. Kansas Welfare cannot pay for medical care when the recipient is eligible for veterans' benefits. All insurance benefits are to be used before Welfare can assume any liability. Hospitals should assume more responsibility in this area of determining possible veterans' benefits. Failure of the practitioner to collect from other third-party payors does not increase Title XIX liability.

No claim will go through the system that is not properly and completely filled out. It is becoming more necessary to have every item on a claim completed in full and correctly. A recent survey of rejects shows that a high percent of rejects are the result of incomplete or incorrect claims. Check your rejects—you may find some errors in your offices.

I am sure some will view these efforts as an interference in the practice of medicine, but let me as-



sure you that this is not the case. It is quantity control but at the same time is quality control. We have always had a welfare program, and I guess we will always have one. Without some checks and balances there would be no limits. The Welfare Department, Medical Services, asks for your help in implementing these checks and balances, but at the same time to provide medical services and health care to those in need.

In my report to this body one year ago, I stated that I would make every effort to keep the lines of communication open. This I will continue to do and welcome your letters, phone calls, and personal contacts.—P. L. Beiderwell, M.D., Coordinator of Medical Services, Medical Services Division, State Department of Social Welfare.

### Birth Control Usage

(Continued from page 301)

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### Editorial Comment

(Continued from page 305)

cultures. At the moment, efforts in behalf of this policy are peripheral. Many physicians feel committed to the maintenance of life by the most extravagant means on the basis that at some time and place, someone has been returned to productivity by seemingly futile efforts. Others, in pursuing the same commitment, see the extension of a terminal state or a vegetative existence devoid of intellect as an aggravation of suffering and, incidentally, a depletion of the financial and emotional reserves of the family (society again?) which might better be applied to the living.

The social attitude is certain to be influenced by the fact that, although history is notoriously repetitive, we are the reluctant witnesses to a first. There is a real basis for believing that the world is approaching the saturation point of human life. Unless vastly more efficient energy sources are developed, unless food supplies and distribution can meet the geometrically increasing demand, unless fertility can be sharply curtailed, the doomsayers are, for the first time, likely to be right.

Life is still measured against death, the quality of life against the quality of death, the maintenance of life against the acceptance of death. If these measurements have been primarily in the hands of the physician and he feels he has unique qualification for their interpretation, he can expect the incursion of social and political voices in increasing volume into what heretofore has been the ultimate expression of the physician-patient relationship.—D.E.G.

# Woman's Auxiliary

## ... Adam's Rib turns into LEGS

Here's a late bulletin for the men: The women of the Medical Auxiliary have formed a new subcommittee called LEGS.

No, it's not a high-kicking chorus line. Sorry, doctor. But it is a high-priority item, because LEGS stands for *Legislative Effort Group System*, and will be the backbone of a new Auxiliary effort to put *your* ideas across to Congressmen.

This new program has been developed by the National Auxiliary after many years' work on legislative efforts with the AMA. Each state, including Kansas, will have a legislation chairman . . . in our case Mrs. Dean (Jackie) Burnett, Halstead . . . who will appoint an Auxiliary member for each of the Congressional districts. The appointees must be "interested, effective, knowledgeable, and vibrant," a combination pretty hard to come by. We think we have lots of members like this, however! A telephone call will alert these women when their help is needed for an all-out push to ask Congressmen to vote in a particular manner. Frequently time is a factor. A matter of minutes or hours may make a lot of difference in whether or not legislation is supported. These women will write, call or wire, according to directions.

Kansas is going a step further in this all-out legislative campaign. Our doctors have never been inclined to underestimate the power of a woman, so they are asking our help at the state level also. As you already know, the Kansas Medical Society formed a new legislative committee last year. The doctors on this committee have studied pending state legislation, and have kept their district councilors alerted and advised on the possible effects of health related bills. The district councilors have appointed a personal representative to every state senator and representative. This doctor visits with our state officials and

discusses the physician's viewpoint on these bills. Reports on this committee's effectiveness have been extremely favorable.

At the recent state convention in Salina, the House of Delegates approved the legislative committee's action in including the Auxiliary as a part of their legislative committee. Our official representative will be our legislation chairman, Jackie Burnett. We think she has all the qualifications of being "interested, effective, knowledgeable, and vibrant" and then some! (She's purty too.) With the help of her district appointees for the National Auxiliary program, Jackie will carry out the same sort of personal approach at the state level that the men have done during the past year, appointing an Auxiliary member for each councilor district. The women will be alerted and instructed by the medical society committee.

Auxiliary women aren't much for women's lib, by and large. We love being your wives and want to help you in any way we can. We don't burn our bras (although we don't always wear our girdles . . .) and we don't line up and protest our long hours, the constant ringing of our telephones, the evenings we spend alone or the ones we escort ourselves home from some social function because of an emergency call. We will, however, go to great lengths to further your cause, whatever it is, if we are asked. And we've been asked. This time it's legislation, and we think we have the woman-power to do what you want. Maybe we can't prevent a national health program, but can at least try to get things going in the direction you prefer. Maybe we're wrong, but we really feel we are an important and effective part of your career and not just

your other rib,

Auxiliary Annie

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(*Editor's Note:* This announcement is a follow-up to the news release on the same subject appearing in the April 1972 Journal.)

### Amalgamation of National Internist's Groups Declared "Not Feasible"

The American College of Physicians and the American Society of Internal Medicine have issued a joint announcement indicating that a proposed amalgamation of the two groups "is not feasible at the present time."

The announcement issued at the conclusion of the Annual Meetings of ACP and ASIM said:

"Since the announcement of the intention of the American College of Physicians and the American Society of Internal Medicine to form a new, single organization, there has been further discussion by the respective governing bodies at their Annual Meetings.

"It has been decided that it is not feasible at the present time to amalgamate the two groups. Under the circumstances, liaison between the two organizations is essential and will be continued."



### LEONARD O. ARMANTROUT, M.D.

Dr. Leonard O. Armantrout, 62, of Hoisington, died February 25, 1972, at his home. He was born September 13, 1909 in Scott City.

Dr. Armantrout was graduated from the University of Kansas School of Medicine in 1935. He began his practice in Garden City in 1937.

Surviving Dr. Armantrout are his wife, a daughter and two sons.

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### WILLIAM M. BREWER, M.D.

Dr. William M. Brewer, Hays, died February 17, 1972 at the age of 69. He was born November 20, 1902 in Greene County, Arkansas.

Dr. Brewer was graduated from the Washington University School of Medicine in 1928, and began his medical practice in Hays the following year.

Surviving him are his wife, a daughter, and three sons.

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### WILLIAM R. MILLER, M.D.

Dr. William R. Miller, of Summerfield, died January 28, 1972 at the age of 89. He was born April 7, 1882 in Bristol, Virginia.

Dr. Miller was graduated from the University of Kentucky School of Medicine in 1907. His 64 years of practice included locations in Oklahoma and Alaska.

Survivors include his wife and a son.

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### PARKE H. WOODARD, M.D.

Dr. Parke H. Woodard, 76, died January 1, 1972. He was born in Haviland. After graduating from the Rush Medical College, Chicago in 1929, Dr. Woodard taught physiology at the University of Kansas School of Medicine.

Surviving Dr. Woodard are three sons. Memorial contributions may be made to the Parke and Violet Woodard Loan Fund for foreign students, in care of the K.U. Endowment Association.



# The Kansas Medical Society—1972-1973

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